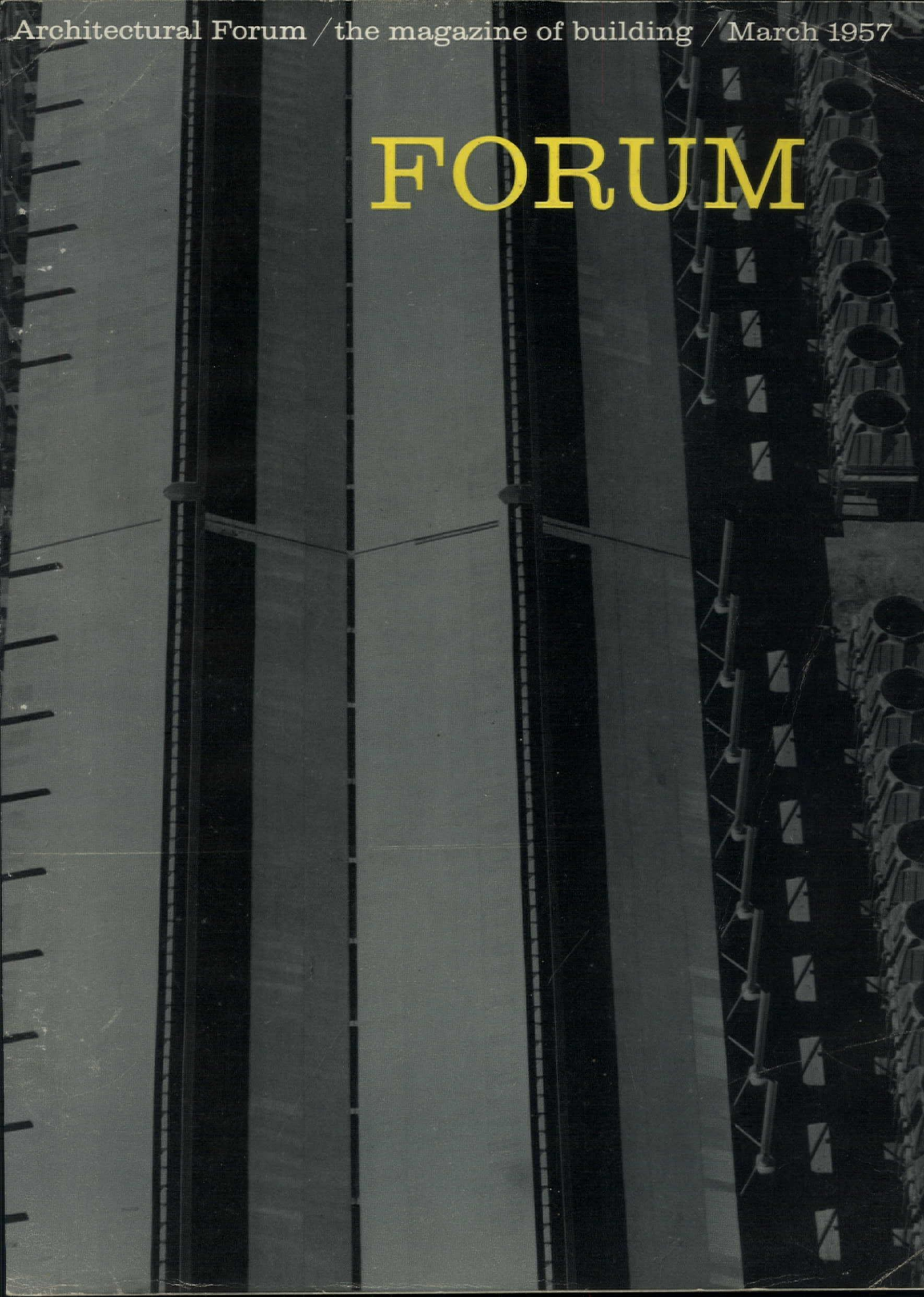
Architectural Forum / the magazine of building / March 1957

# FORUM



# Sales go up – maintenance goes down

## with Formica on walls in Hotels and Motels



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It turns out that there is virtually no surplus; and what little there is can be found where least expected: a lesson for City Hall and city builders.

104 **New York's office boom**

Just why has New York put up more new office buildings postwar, with more new office space than all other US cities combined? Many superficial answers have been given. A rounded investigation brings out some extraordinary reasons.

114 **Beethoven and basketball**

For Tallahassee, Fla. (pop. 35,000), Veteran Architect Walter Gropius and his associates have designed the kind of chameleon auditorium which all sorts of smaller cities have been looking for—where all sorts of shows can be put on by turns under the same economical roof.

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Architect Ieoh Ming Pei uses Western technology to fit the Christian religion into the oldest Eastern civilization and into timeless architecture.

122 **Buildings in brief**

A new bank that wears its familiar old sign on a totem pole, a library that spells out a friendly "Opportunity," a clear building for students of turgid law, a roadside prefab that improves the slum called "Roadtown," and five other buildings, mostly small, all exhibit fresh and usable ideas.

128 **The Miesian superblock**

Urban renewal badly needs some attractive, well-planned residential neighborhoods in the central city. In Detroit the famed architect, Mies van der Rohe, and his team are making a noteworthy demonstration.

134 **Land II: the strange case of the city**

How the great land boom has left central cities behind. Second in a series.

137 **The Knoll interior**

The modern American business interior has become an international export. Three new showrooms show what makes this export effective.

141 **Architecture as space**

Excerpts from a new book by the Italian critic and architectural statesman Bruno Zevi, who says that the whole object of architecture is interior space and shows how Christianity brought human dynamism into classical interiors.

144 **Roofscape: the fifth façade**

Never before were so many roofs looked down on by so many people. A gallery of photographs showing some of the things they may have noticed.

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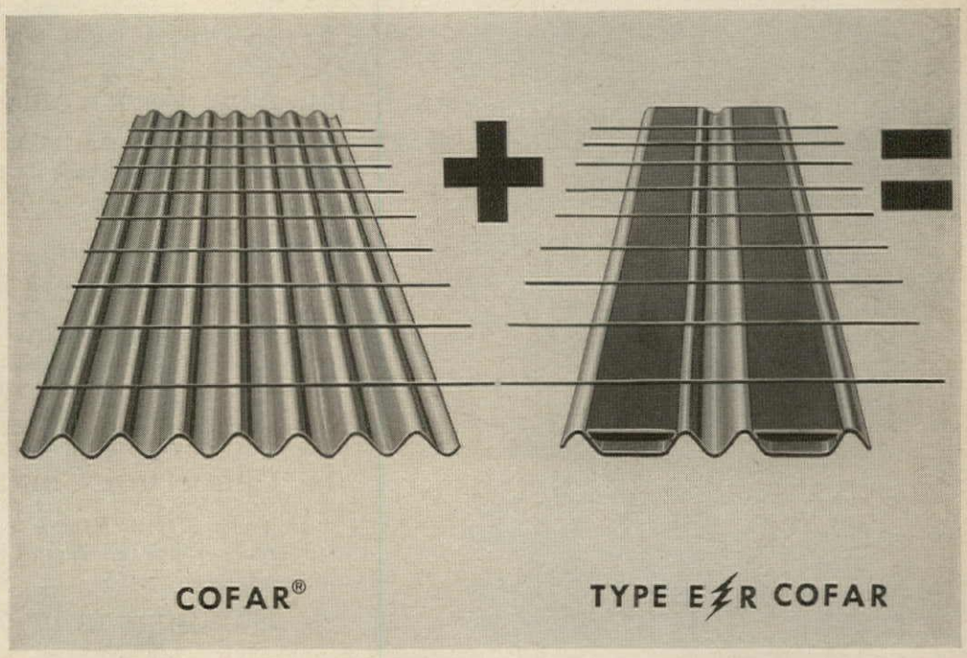
A new continuing review of international building.

# New reinforced concrete floor

**Why didn't someone think of this before!** One simple, cost-cutting operation, yet it combines 3 major steps in the construction of office building floor slabs—

1. **Forming**
2. **Reinforcing**
3. **Electrification.**

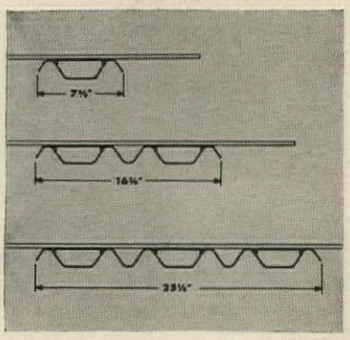
Heart of the system is Type E-R (for "Electrically Ready") Cofar, new cellular units designed to carry wiring. When these cells are combined with Cofar—a unit that forms and reinforces concrete—all 3 slab requirements above are met *before concrete is placed!* Chief advantages: A low-cost, high-strength floor with electrical flexibility that meets the present and future demands of *any* office building. No wasted fill. No wasted ducts or wiring. Fewer construction steps. Here's how it works . . .




Conventional Cofar units are deep-corrugated high-strength steel units—2½ feet wide—with transverse wires welded across corrugations. The steel serves as a tight form for wet concrete and becomes main positive reinforcement when concrete sets. T-wires furnish necessary temperature reinforcement and mechanical anchorage between slab and steel.

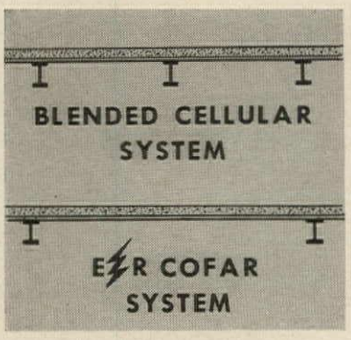
E-R Cofar cells are used between conventional Cofar units. These cells are wide troughs *capped* to form spacious 5.2 square inch raceways for wiring. NOTE: E-R Cofar units also have T-wires welded across corrugations to maintain Cofar composite slab action. Type E-R Cofar is equally suited to steel or concrete frame construction.

## CHECK THESE MONEY-SAVING ADVANTAGES OF THE E⚡R COFAR SYSTEM



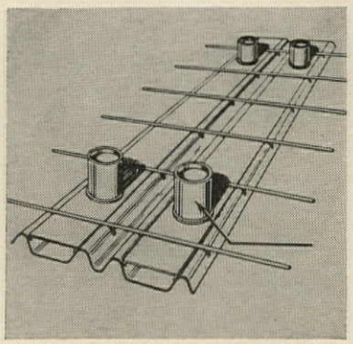
### 1, 2 or 3-Cell Units

With E-R Cofar, you *choose* the amount of electrification you want. One, two and three-cell units are available and spacing between units may be varied as necessary. Units are available in lengths to 16 feet and are manufactured from heavy gage galvanized steel.



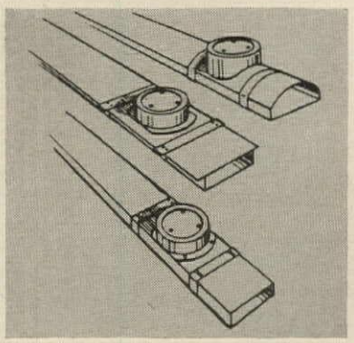

### Reduces Framing

Cofar slabs are more economical than any other type of floor forming and deck system on 10′ to 14′ beam spacings. Wide spacing eliminates need for intermediate beams, saves on fire-proofing materials. Lighter dead loads also save on footings and foundations.



### Pre-Set Inserts

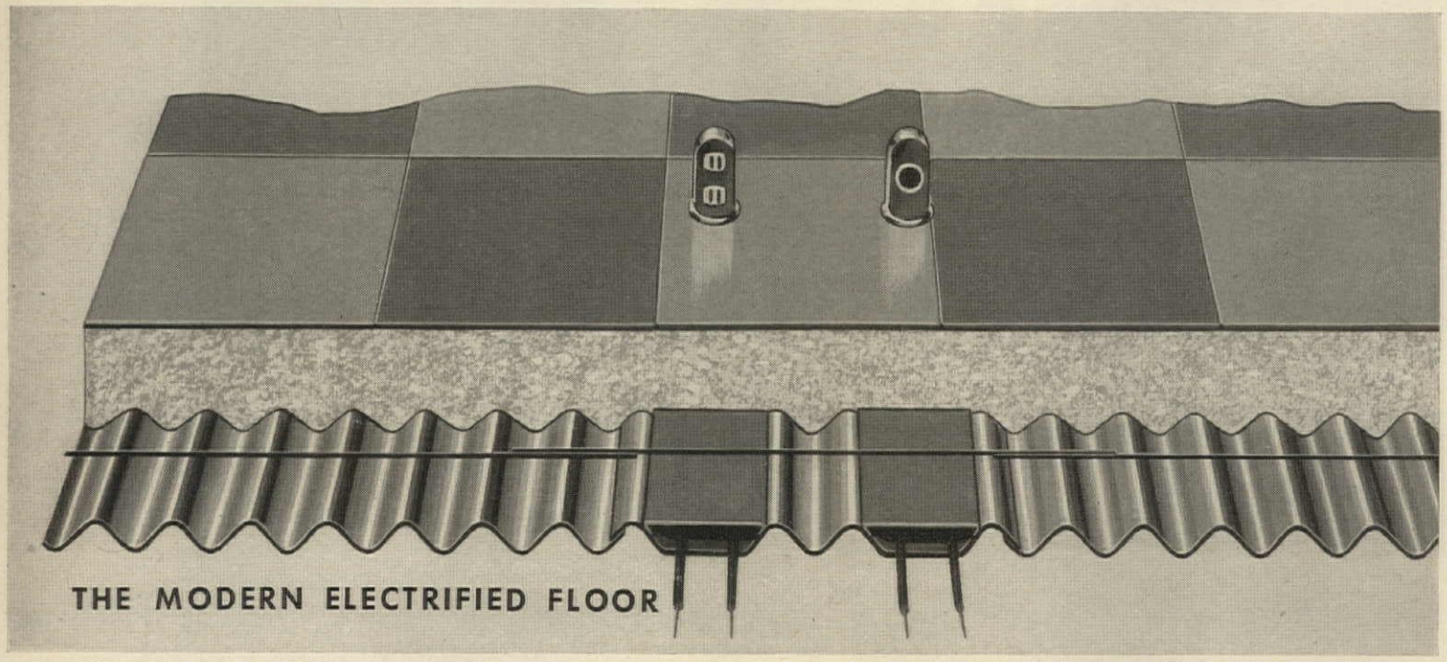
Available with either pre-set or with blank cap plate for after-set inserts, E-R Cofar provides complete electrical accessibility. Pre-set inserts eliminate noisy and costly concrete drilling operation. If desks are rearranged, floor service outlets can be located in *minutes.*



### Header Adaptability

Any Underwriters' Laboratories-approved header duct system (such as Nepco or Walker) can be used to activate Type E-R Cofar cells. When two or three-cell units are used, service fittings can be placed as closely as 8 inches apart on the finished floor (see above).

# system is completely electrified




In the finished system, E-R and conventional Cofar units work together to provide a superior reinforced concrete floor with complete electrification. A network of E-R cells—placed where you want them—assure electrical flexibility for the life of the building. Wires are pulled through the raceways and brought to desks and machines no matter where they are located. At the same time, Type E-R Cofar floor slabs retain all the advantages of reinforced concrete. Concentrated loads are distributed by the 2-way slab action of high-strength Cofar floors. Structural tests verify the ultimate strength to be 7 to 10 times design load. Use of 1.5 oz. hot-dip galvanized coating guarantees building life permanence. Type E-R Cofar floor slabs offer a low-cost, high-strength floor which is always "electrically ready."

## UNDER CONSTRUCTION . . .

E-R Cofar has been specified for the Fidelity National Bank Building in Baton Rouge, La.

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*Contractor:* L. W. Eaton Co., Inc.
*Structural Engineer:* Metrailer & Ingram
*Electrical Engineer:* Chesson, Forrest & Holland
*Electrical Sub-Contractor:* Sachse Electric Company
(*All firms located in Baton Rouge, La.*)



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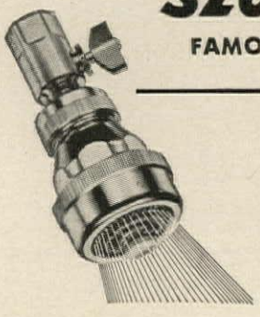
Photos by Roger Sturtevant

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# WINNER OF TOP AIA HONORS— 1956 ARCHITECTURAL AWARDS

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# Storm brewing as GSA suspends lease-purchase program, says President curbs building

Only rarely has victory been snatched from defeat so neatly. Col. Blimp himself could not have done it more adroitly or magnificently.

Every heroic effort — except the equivalent of a free market interest rate—had failed to get it running. Then, in an announcement crusading against inflation, the General Services Administration "halted" its already-stalled lease-purchase construction program.

Nothing was held up that was not unable to move under previous conditions anyway. The only immediate "impact" on building would be a great display of verbal fireworks due at month's end when two Senate and House committees started hearings on the program's difficulties.

But a deeper question did trouble thoughtful industry observers. Did the GSA action establish any precedents or signal the start of a more widespread "policy" of controlling or restricting public works construction in times of peace and prosperity as well as during national emergencies?

After long delays, the Budget Bureau and Congressional committee "watchdogs" had finally approved almost 100 buildings for a total of roughly $700 million under this program, but only one was under actual contract for construction. Announcing that he had "temporarily deferred" the program, GSAdministrator Franklin G. Floete said:

"These steps are in line with the policy of the President, as stated in his state of the union and budget messages, of postponing all work which can be deferred, with the exception of urgent school, highway and housing requirements and thus avoiding aggravating inflationary pressures caused by unnecessary competition for labor, materials and equipment. . . . When present inflationary pressures in the construction industry recede, advertising of these and other projects will be resumed. . . . In the meantime, GSA will proceed with preparation of architectural and engineering designs . . . and acquisition of sites for projects."

But not all of the administrator's words and actions were suited to each other. With the possible—still uncertain—exception of one $23 million Baltimore building for the Dept. of Health, Education and Welfare, for instance, GSA was not yet dropping any other buildings for which appropriated funds were in hand. Moreover it was going ahead with its big air-conditioning, modernization and improvement programs in existing government buildings, for which it also had appropriated funds.

Lease-purchase postponement was also a little at odds with one section of Floete's own most recent annual report in which he said: "Since 1939, there has been little building to provide up-to-date office space for federal agencies. . . . As a result, by 1956 the government had on hand many aging and outdated buildings that adversely affected the programs housed in them."

The ultimate irony in the situation—which was not of Floete's creation, but simply his inheritance from a long line

TIERNEY & KILLINGSWORTH



**TRIPURPOSE MIAMI BUILDING**

Nearing completion in Miami is this 625' long, $10 million aluminum and stainless steel DuPont Plaza Center building that will house the 301-room DuPont Tarleton Hotel, the 70,000 sq. ft. Plaza office building, and the Miami Architects' Bureau of Building Products. The Florida Assn. of Architects, the South Florida AIA chapter and a number of architectural offices have already leased space in the building. The bayfront structure will have 1,000' of yacht docking space as well as a parking area for 900 cars. Inspecting a model at the recent FAA convention, at which it won a certificate of excellence, were (l to r): national AIA President Leon Chatelain Jr., Clinton T. Wetzel, head of the architects' bureau, and Frank Shuflin, codesigner of the building with John Edwin Peterson.

of previous Congresses and administrators—was this:

In simple terms, lease-purchase was the government's installment buying dodge to avoid the unhappy responsibility of appropriating the funds required to pay for necessary public buildings that would mean higher taxes or larger budget deficits. It was in effect "private financing" of public buildings. For more than two decades, through war and peace, Democrat and Republican administrations alike had failed or refused to appropriate or utilize cheap money for needed federal building programs. But now even the remedial relief substitute program was being halted, this time on the excuse that money was too costly; and that, under present circumstances, such build-now-pay-later construction would be inflationary.

**No one else cutting back**

Floete's suggestion that there was a "policy of the President . . . of postponing all work that can be deferred" also opened wide to speculation the question whether there really existed any such formal, firm, established policy with definite criteria for judging which projects should be deferred, and which ones processed as urgent. In a sympathetic move, the Post Office decided to press its lease-purchase efforts less vigorously (but not to refuse a good deal if it could make one). For its smaller building requirements, in its leasing-without-purchasing program, it would take some of the emphasis off construction. But otherwise there were no signs that any other Washington agencies were seriously curtailing any construction in line with any such presidential policy.

Answering the question whether there are now inflationary demands for building materials, the Commerce and Labor departments have reported that the physical volume of construction had apparently declined about 2% last year, compared with 1955 (p. 43); and as 1956 ended producers of many key materials "were making downward adjustments in production" (p. 46).

As FORUM went to press, the Senate public works subcommittee headed by Sen. Pat McNamara (D, Mich.) had summoned GSA and Post Office officials to a lease-purchase hearing, at which AIA, AGC and other industry groups would also testify. Democrats, viewing the GSA curtailment as an effort to make a virtue out of a necessity—the Budget Bureau had already killed incentive by vetoing a yield exceeding 4% on any lease-purchase contract—were expected to rake Floete over the coals, even if they advanced no constructive proposals of their own.

In the House, Rep. Robert E. Jones, (D, Ala.) introduced a bill to ditch the entire lease-purchase program (except for Washington area projects), substitute a five-year $1.5 billion direct appropriations program that could be started immediately with all the projects now ready under the present law. Among other things, Jones objected to the fact the federal government would indirectly pay full local real estate taxes on all buildings during the full period of their contract purchase acquisition.

In a statement prepared for the Senate hearing on behalf of AGC, Builder Robert W. Long, of Kansas City, said, "Congress should not let a few minor technical difficulties at the outset disrupt a logical, sensible and necessary program." Disputing suggestions of any widespread labor scarcities, he added: "In my own experience in many communities this work is needed now to bolster employment in the construction trades."

Most pointedly of all, Long cited two AGC surveys that showed that most prospective lease-purchase builders made no bids on its initial projects because they found it "impossible to interest financing institutions in long-term investments at 4%. . . . Also many government agencies are competing at variance in the money market . . . the Maritime Commission can guarantee ship building loans in excess of 5% and other agencies guarantee loans in excess of 4%."

**Treasury money for housing**

Commenting on the GSA action in a New York interview, NAREB President Kenneth S. Keyes, of Miami, thought there could advisably be "a reasonable amount of curtailment" of nonurgent federal, state and city public works at this time. Could he reconcile GSA's effort to reduce demands on building materials and labor with the President's recommendation for $700 million of Treasury funds and $1 billion of new borrowing power for Fanny May, which would stimulate homebuilding's demands for similar materials and labor? The latter program, Keyes suggested, "recognized" the special social attributes of homebuilding, the contribution of good, plentiful housing to the national "well-being and way of life," and the great value of widespread home ownership as the most effective antidote to socialism and communism.

PUBLIC BUILDING

## Advisory group may veto Capitol front change

Was it possible the controversial $17 million-plus East front extension of the Capitol (AF, July '56) would not be undertaken after all?

Said a Washington *News* editorial last month, "Leave It Alone," with this cryptic beginning:

"Goodness knows, there are enough special committees around to satisfy almost everyone. But we feel impelled to form another one the whole American people should rally around promptly.

"It is: The Committee to Protect the Capitol from Congress.

"Congress last year voted funds to start moving the East front. It was a shocking thing to do, but it was done. Then a special subcommittee of architects was appointed to study how to do it without destroying the unique architectural beauty of the great Capitol dome.

"There is a rumor that after many months of thought these architects are now ready to recommend that the project be abandoned."

Adamant answer of Architect of the Capitol J. George Stewart: "No comment."

## Atlanta team will design congressional subway

A contract to design one of the nation's smallest but most important new transit systems was let in Washington last month. Architect of the Capitol J. George Stewart commissioned Architect Jesse M. Shelton, and Alan G. Stanford, of Robert & Co. Associates, architects and engineers, of Atlanta, to start planning a comprehensive new underground subway system linking together Senate and House wings of the Capitol and all five new and existing congressional office buildings.

First phase of the contract calls for designing new and faster type vehicles to replace the obsolete 50-year-old monorail cars that now link the Capitol and the present Senate office building. These will be some form of unroofed, miniature trolleys with the safest type recessed third rails under the roadbed. Senators want no more of the overhead

monorail that occasionally throws off small drops of dignity-devastating grease.

As for new routes, an entirely new Y-shaped line will be built to run northward from beneath the steps of the Senate wing to the present Senate office building and to the new $20 million Senate office structure to be completed next spring. Later another Y-shaped line will be built southward from under the House office buildings and to the third new $64 million House office structure to be started this summer (the first time House members will enjoy equal transportation rank with Senators). Eventually, it is planned to connect both systems with tracks running under the proposed extension of the east front of the Capitol.

## Greenwald getting nod for N. Y. Title I job

Three high, circular "Helix" apartment buildings in a large park, with lower Manhattan's towering skyline in the background, made a dramatic picture in full-page national ads of Universal Atlas Cement last September. Said the copy: "This project is part of the proposed redevelopment of the Battery Park area of New York City. I. M. Pei & Assoc., architects—a Webb & Knapp project."

But last month through William Zeckendorf's always pulsating Webb & Knapp headquarters ran a tremor of disappointment tinged with chagrin. Instead of Webb & Knapp, a corporation headed by Chicago Redeveloper Herbert S. Greenwald, currently starting the Mies van der Rohe designed Lafayette Park—University City project in Detroit (p. 128) was now reported to have become the favored "tentative sponsor" for this proposed Title I project. (And once again the Pei-Zeckendorf "Helix" plans were going back on the shelf, not onto a building site.)

Theoretically at least, W&K could still bid on the Battery Park redevelopment land whenever the official "auction" of it took place some time in the future. But since the firm is an advocate of "negotiated" contracts for large-scale redevelopment projects, observers doubted that it would make any such bid, or risk the resultant displeasure of the head of the city's extensive redevelopment program—in which it might still wish to be the developer for some other project another day, when it could win the nod.

In Washington, where Webb & Knapp hoped to redevelop the huge, 446-acre Area C project, the company would soon start negotiating purchase price of the land from the District redevelopment agency. The latter estimated its 300 acres of usable area would sell for about $53.6 million—roughly $4 a sq. ft.

URBAN RENEWAL

## Prudential plans huge business-hotel-housing center in Boston—entirely unsubsidized

On a 32-acre site in downtown Boston that it is buying for roughly $4 per sq. ft., the Prudential Insurance Co. is planning a huge, entirely unsubsidized urban renewal project described as "the world's largest integrated business, civic and residential center" (see cut).

The site consists of the 28-acre Back Bay yards of the Boston & Albany Railroad (plus several smaller adjacent plots) where Promoter-Developer Roger Stevens and associates originally planned a giant hotel and business center designed by the Boston Center Architects (AF, Nov. '53).

But Stevens had wanted special real estate tax relief that the city was not able to grant constitutionally. In the end he sold his B&A yards option to Prudential, and will now be a "consultant" for its venture. The insurance company will not get any special privileges either, nor will it be subject to all the bureaucratic regulations and controls that are often part of the price of publicly "aided" projects.

### City to build auditorium

To help persuade Prudential to come and build in Boston, the city did pledge informally to buy a portion of this site and erect a civic auditorium and convention hall for 6,000 persons that will cost about $7.5 million. Last month it was not yet settled how large an area the city would buy (estimates ranged from 75,000 to 115,000 sq. ft., or less than 9% of the 1,366,000 sq. ft. site), or whether Prudential would re-sell this area to the city at cost or at a "profit."

In addition, the Prudential property was subject to two underground easements to accommodate two B&A mainline tracks, and, if necessary, an eight-lane state turnpike. Presumably the property might have been sold for a higher price if it had not been subject to these easements—and especially if it had not been subject to the high taxes and assessments (currently $78.70 per $1,000 on virtually full value) that scared off Stevens when he could not obtain the relief he sought.

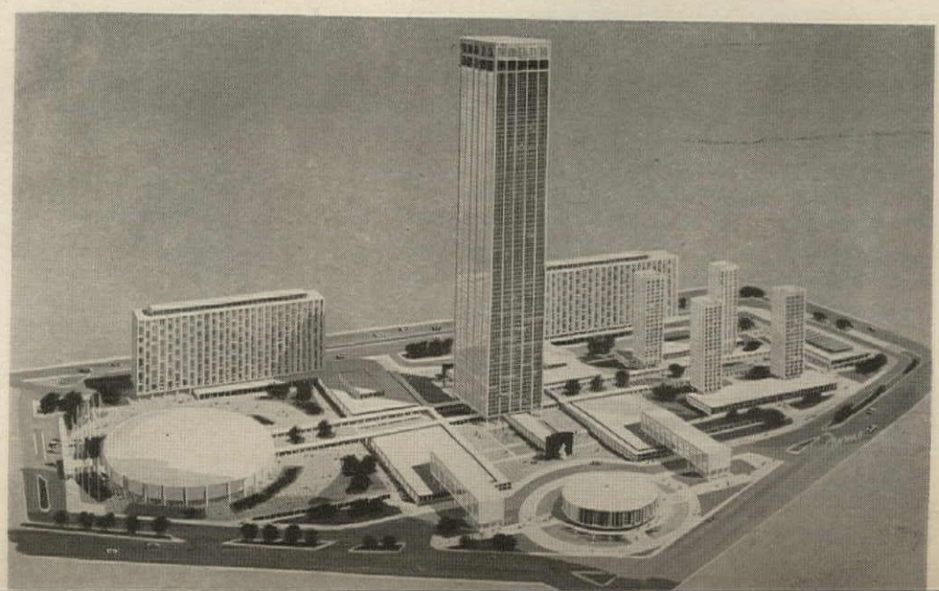
But if the most significant aspects of the Prudential project were intangible—the decision to invest so heavily in Boston without special tax relief or site subsidy on such a huge project—some of its tangibles were also notable.

### New England's tallest building

Rising in the heart of the complex, to be called Prudential Center, will be New England's tallest building—a tower of about 50 stories, roughly 125′ square. On the basis of early plans, this will have about 750,000 sq. ft. of floor area,

*continued on p. 9*

BOSTON PRUDENTIAL TOWER WITH HOTEL, AUDITORIUM (L), HOUSING (R)



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about 250,000 sq. ft. to house Prudential's new New England regional headquarters, and about 500,000 sq. ft. for rent. Exact building height (about 600') and cost estimates are still uncertain, but published unofficial estimates of $50 million indicated a cost of some $60 per sq. ft. for this structure.

Grouped to the west of the tower (l. in cut) will be a 1,000-room hotel and the public auditorium-convention hall; in the front (south) an 800-seat circular restaurant. To the east, only a little more than a block from Copley Square and the Back Bay station, will be a group of high-rise and low-rise apartments for 1,250 middle- and upper-income families, and about 150,000 sq. ft. of retail commercial space. Underground, mainly in an expansive depression already occupied by the railroad yards, will be two, and in some instances three, vast levels of parking for 5,000 cars; around the entire grade-level mall-and-plaza landscaped site—only about 30% of it covered by buildings— there will be an independent traffic free, secondary "ring road."

**Prudential in full control**

Initially, Prudential will direct and finance the entire project, thus retain complete, direct control over every phase of it. Eventually, however, it will probably sell or lease the hotel to an established chain, and conceivably also may sell the housing after it is completed, fully tenanted and running smoothly. This will be the first re-entry of a large insurance company into the equity-owned housing field in several years, since states and cities started tying all sorts of strings and conditions onto the construction and operation of projects that benefit in any way through public expenditures for urban renewal, or redevelopment tax abatement. Sale of the housing after completion also would allow Prudential to benefit more fully from the increment in land values that the development will produce. A spokesman also said the company is "bullish" on this housing, because it believes the next major trend in urban development will be residential "recentralization."

Prudential President Carrol M. Shanks said construction will begin in about a year, as soon as detailed architectural drawings are ready, and the entire project of 12 separate structures should be completed in about five years. He steadfastly refused, however, to make any estimate of ultimate total costs for the center, which insistent newspaper reporters characterized as a $100 million and higher project.

Architects for Prudential Center are Hoyle, Doran & Berry, of Boston (successors to Cram & Ferguson), with Pereira & Luckman, of Los Angeles, as coordinating architects. Engineers: Metcalf & Eddy, of Boston.

ARCHITECTURE

## Chicagoans rally to save Wright's Robie house

Chicago architects led by AIA Chapter President Samuel Lichtmann and Earl H. Reed, of AIA's national committee on preservation of historic buildings, were working their hardest last month to prevent demolition of the Robie house—one of Frank Lloyd Wright's most celebrated early creations (1908) world famous for its architecture.

The threat to the famed structure is real, says Lichtmann, although reports that demolition was imminent early last month were inaccurate. The (Congregational) Chicago Theological Seminary, owner since 1926, is planning a married students' apartment building on a site the house partially occupies. Groundbreaking is not scheduled until fall, however, allowing a little more time to develop some preservation policy.

The architects have suggested one possible solution: have the seminary swap the Robie house and grounds to the University of Chicago for land the University owns adjacent to the seminary campus. The university could use the structure as a guest house for visiting celebrities, says Lichtmann. Seminary President Arthur Cushman McGiffert Jr. promised to consider the matter and was going to issue a more definite statement on the institution's plans by month's end. Seminary Business Manager R. K. Houglund, pointing out that conferences are still being scheduled in the structure, would only say: "Draw your own conclusions whether we're going to tear it down." But he was blunter with his opinion of the structure except as a private dwelling: "It's been used as a conference house, as a women's residence hall, and as a dining hall, and it fits none of these things."

Thousands of architects from all over the world have inspected the Robie house when visiting Chicago. Its powerful forms, its wide cantilevers, its in-and-out use of space, make it one of the top two or three examples of modern house architecture in the world. In 1941 the seminary also considered demolishing it, but deferred to pleas to spare it from a committee of leading architects and from leading museum directors. Commenting on the current demolition threat, Lichtmann said: "Chicago is not so richly supplied with architectural monuments that we can afford to throw any away. It would be a horrible calamity to our cultural heritage if the Robie house were destroyed. It's a landmark in what we like to call the Chicago school of architecture."

Whoever owns the house if it is not demolished, however, will face the need to give it extensive repairs estimated to cost as high as $80,000. Source of this fund: not yet blueprinted.

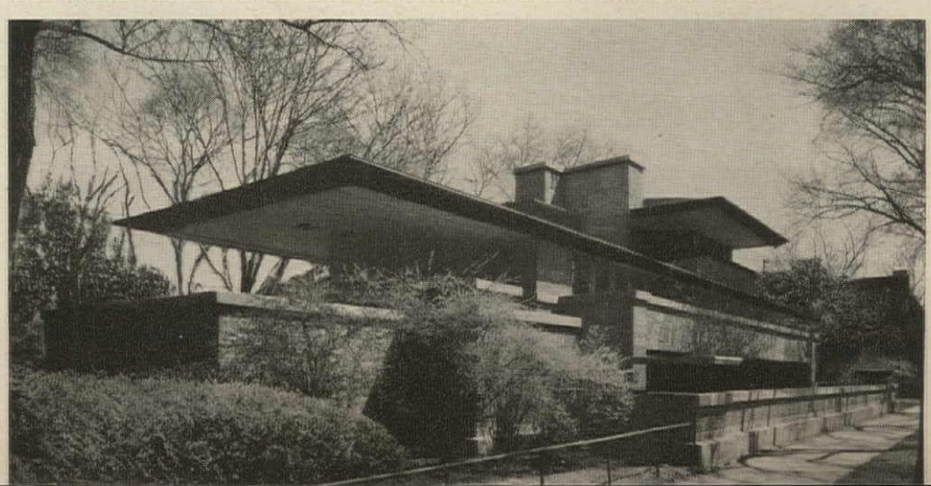
COMMUNITY PLANNING

## San Francisco battles US building; soon submits

In San Francisco, architects, press and the public are usually quick to rally to a good civic design or public works row.

Last summer they staged a lively (but too late to be of any avail) fight to prevent the rearing of a two-level elevated Embarcadero freeway that would cut off the view of their famed Ferry House (AF, Nov. '56). In December

THE ROBIE HOUSE: TO BE GROUND DOWN BETWEEN TWO CAMPUSES?



BILL ENGDAHL, HEDRICH-BLESSING

they started to muster for what promised to be another spirited battle—over the design and civic center location for a giant $45 million US courthouse and office building, to be the second largest federal building outside of Washington.

But last month all was peaceful again in San Francisco after a short (but well-taken) lesson in the politicking, the intercity rivalry and the single-mindedness of GSA that often outweigh esthetics and many other factors when that agency is determining the sites for federal buildings.

Final site for the huge structure to house some 6,100 US court, internal revenue and other workers: a full block just off the northeast corner of the civic center. This pleased hardly anyone.

In a futile early round, before the knockout, in almost a full-page editorial that included two immense aerial views with superimposed drawings, the *Examiner* protested that this site would require a building of 14 to 18 stories high that would improperly "dwarf . . . the golden domed City Hall . . . to insignificance. Instead of an orderly and lovely civic center we will have one forever lopsided." This echoed the views of Mayor Christopher, city planning department, art commission and other civic organizations that had favored and anticipated selection of a site just southeast of the center fronting on busy, more convenient, mass-transit Market St. A larger site here, they argued, would require construction of a lower, less-dominating structure of only about ten stories, more in architectural harmony with the rest of the civic center.

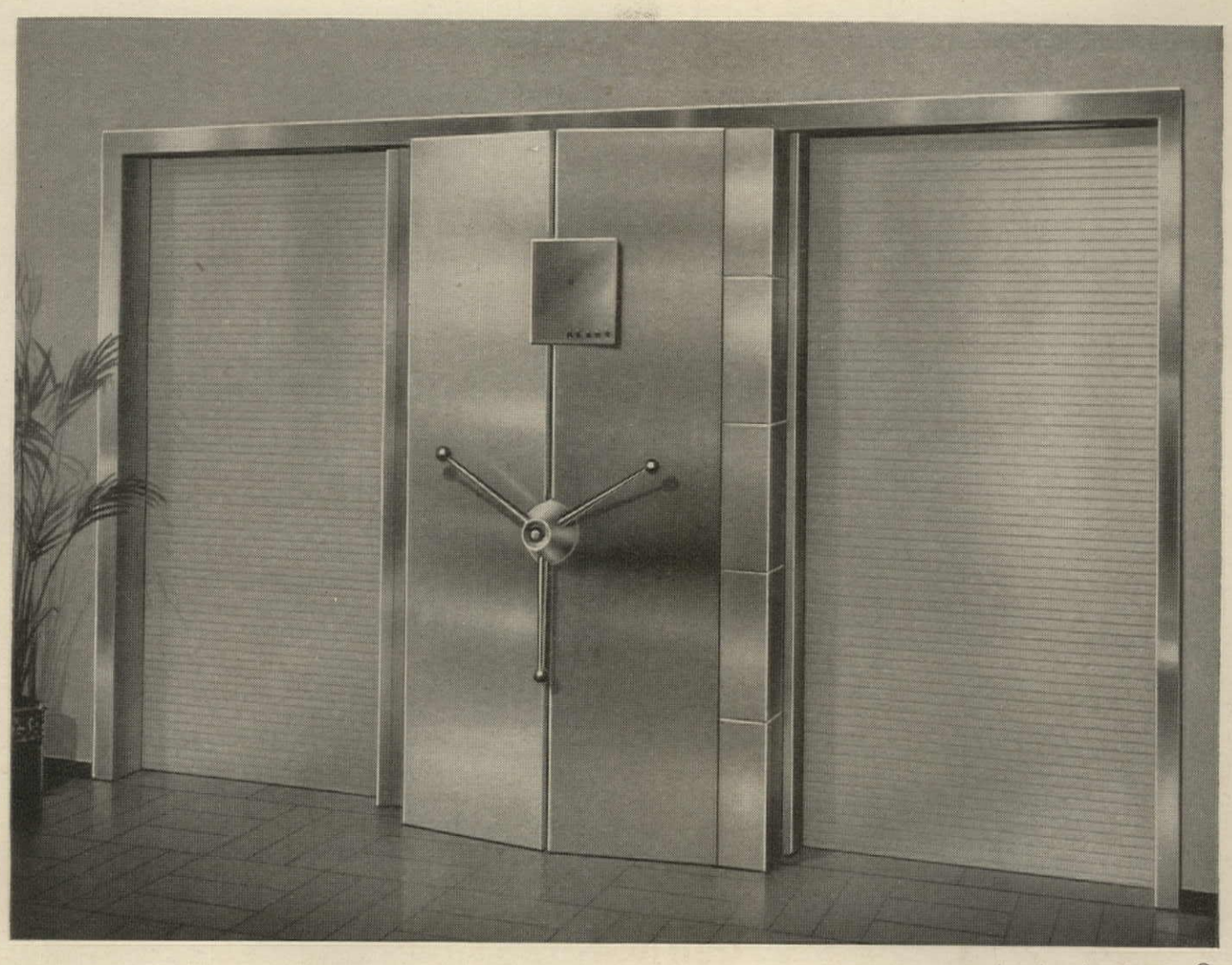
After GSA announced selection of the northeastern block, which it expects to acquire for about $1.5 million, owners of one available southeastern site on Market St. reduced their offer to sell to GSA from $3.8 to $2.8 million. Simultaneously, Mayor Christopher begged GSAdministrator Franklin G. Floete to reconsider. But Floete said "absolutely no." Answering the mayor's complaints that the northeastern block was poorly located, Floete insisted: 1) it would be convenient to the civic center and help develop its northern perimeter, just behind the State Building; 2) its size is adequate, and 3) it possessed better (less-expensive) foundation conditions —a factor he rated as one of the most important elements influencing the decision.

After the mayor made a trip to Washington, however, the fight was soon given up as a lost cause and terminated as quietly and gracefully as possible. Reason for surrender: the mayor learned that "East Bay politicians" had met secretly to map a campaign to capitalize on the dissatisfaction in San Francisco, pressure GSA to relocate the building in another city. Discretion beat valor again, and city pride was swallowed rather than risk losing the structure to a rival community.

Last month more than 40 architectural offices that applied for the commission to design this "modern, functional building" were anxiously awaiting an early decision by GSA on this phase of the project. The structure is scheduled for completion in 1960 under the GSA's lease-purchase construction program, which was temporarily suspended by the administration last month as an anti-inflation measure (p. 5)—although planning of projects will continue uninterrupted.

NEWS *continued on p. 12*





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PROFESSIONAL RELATIONS

## Seattle solves dilemma over library architect

Seattle's library board finally settled the fracas over selection of an architect (AF, May '56) that was delaying its new central library to be financed with a $5 million bond issue voted last March. Not one but two local offices were chosen: Jones & Bindon, and Decker, Christenson & Kitchin, associate architects.

Before making its decision, the board obtained recommendations from a special advisory committee composed of M.I.T. Architecture Dean Pietro Belluschi, Arthur P. Herrman, FAIA, professor and director of the University of Washington school of architecture, and Detroit Public Library Director Ralph A. Ulveling. For $1,500 this committee met in Seattle Nov. 13 to 15. Most of its report consisted of a lengthy discussion of both pros and cons of competitions and more conventional methods of selecting an architect, as contained in a copy of a four-page letter Belluschi wrote in 1954 to Wellesley College officials who wanted advice on the best means of procuring a fine arts building designer. From that letter, the Seattle board could "draw its own conclusions, as they apply to their own problems," said the committee's report. "Another suggestion," it added, "is that two or more firms of architects be asked to associate, but this should be done not as an expediency, but as an attempt to combine different kinds of talent. The combination must be willing to get along with each other, and be able to offer not only competent but imaginative services."

Selection of Jones & Bindon, which has had a long association with the Seattle library system (and, in a span of 50 years under earlier partnership names, has designed libraries for many other cities too) apparently resolved an embarrassing question for the library board, for Jones & Bindon, and for a considerable number of other local design offices. In connection with last year's bond issue—as well as an unsuccessful referendum in 1950—Jones & Bindon had prepared schematic drawings and models for which it had not been paid. Last spring, when board troubles over selection of an architect were being aired in the Seattle press, Senior Partner John Paul Jones wrote to the city council that, "If we are selected, we will naturally absorb the cost of these drawings (about $14,000), since they are part of the work for which an architect is paid under the customary percentage fee contract. If, however, we are not selected, we believe we would have a valid claim for the work we have done."

At that time Librarian John S. Richards reported that 18 architectural offices had asked to be considered for the design contract. Simultaneously, Washington chapter AIA President Lloyd Lovegren issued a public statement that said: "There are involved legal, moral and ethical aspects as to whether the library board is obligated to Jones & Bindon." Other architects ethically could be interviewed by the board, Lovegren added, but they could not seek the work if the board was obligated to Jones & Bindon.



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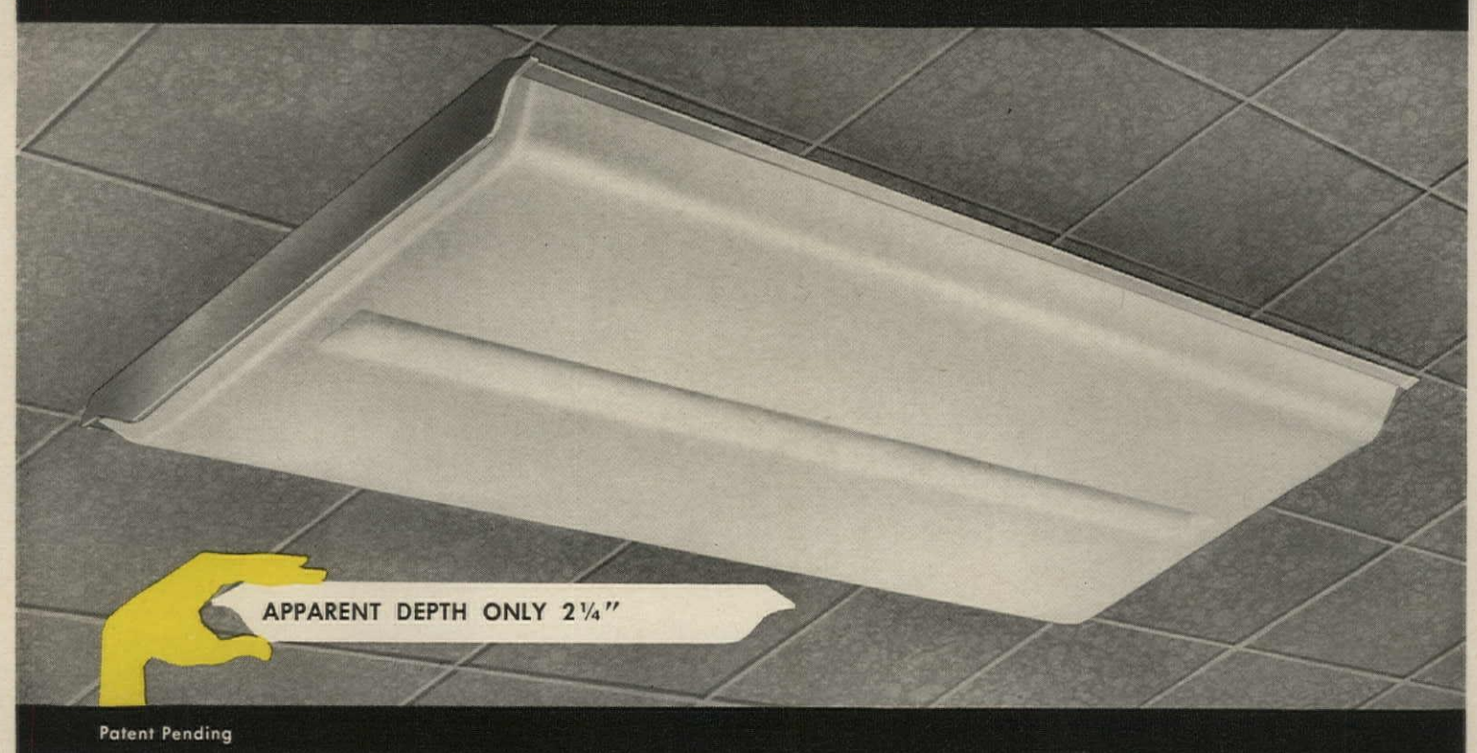
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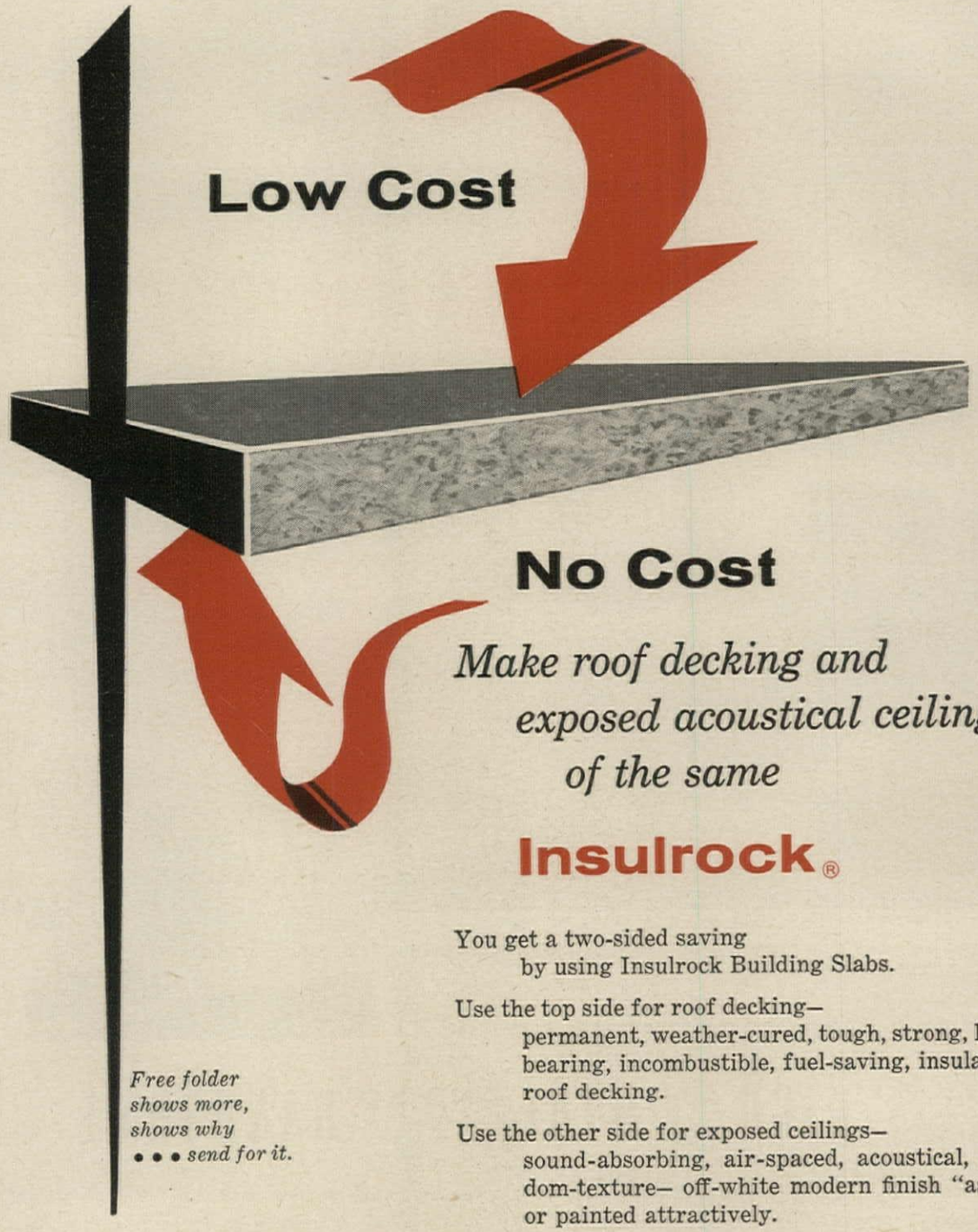
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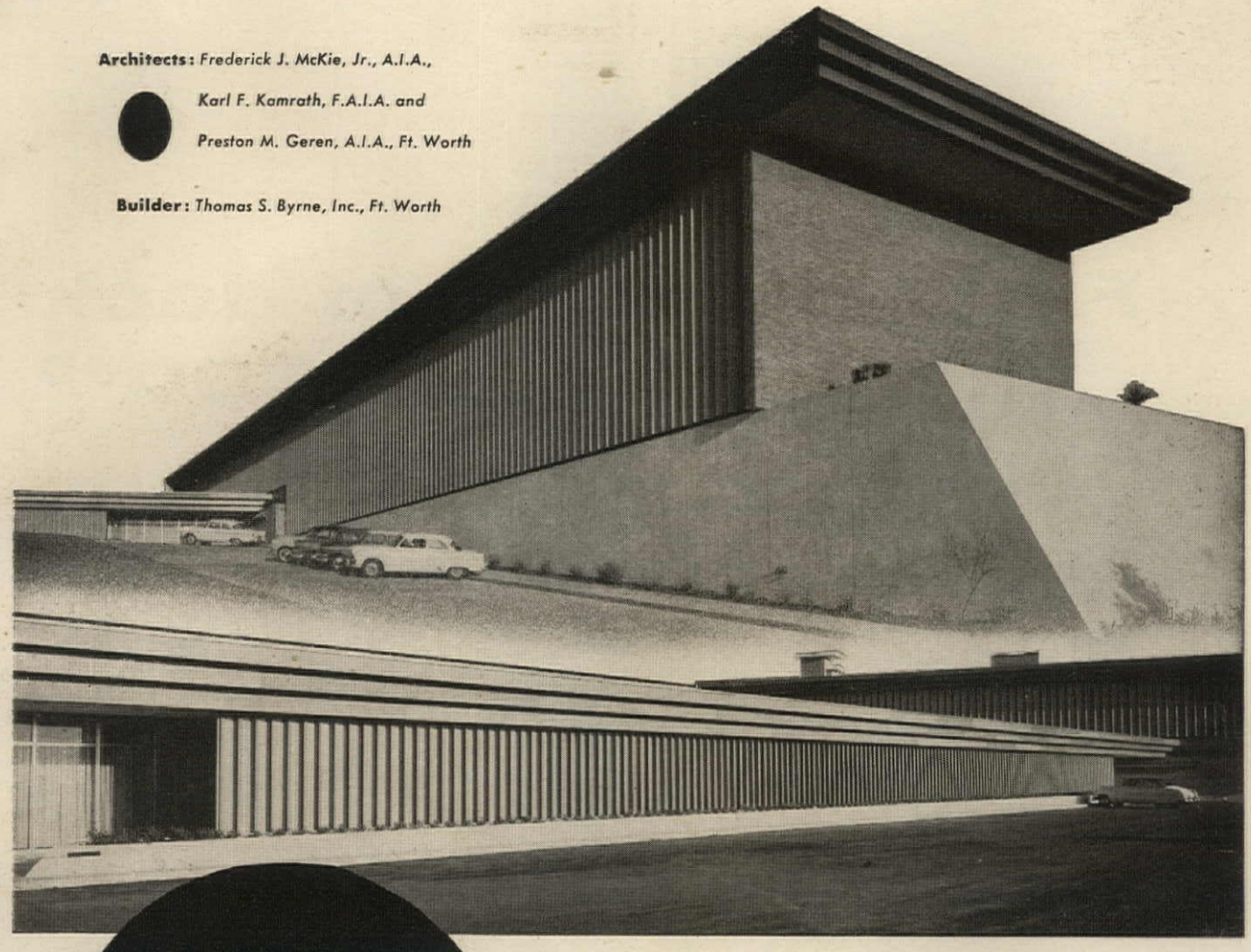
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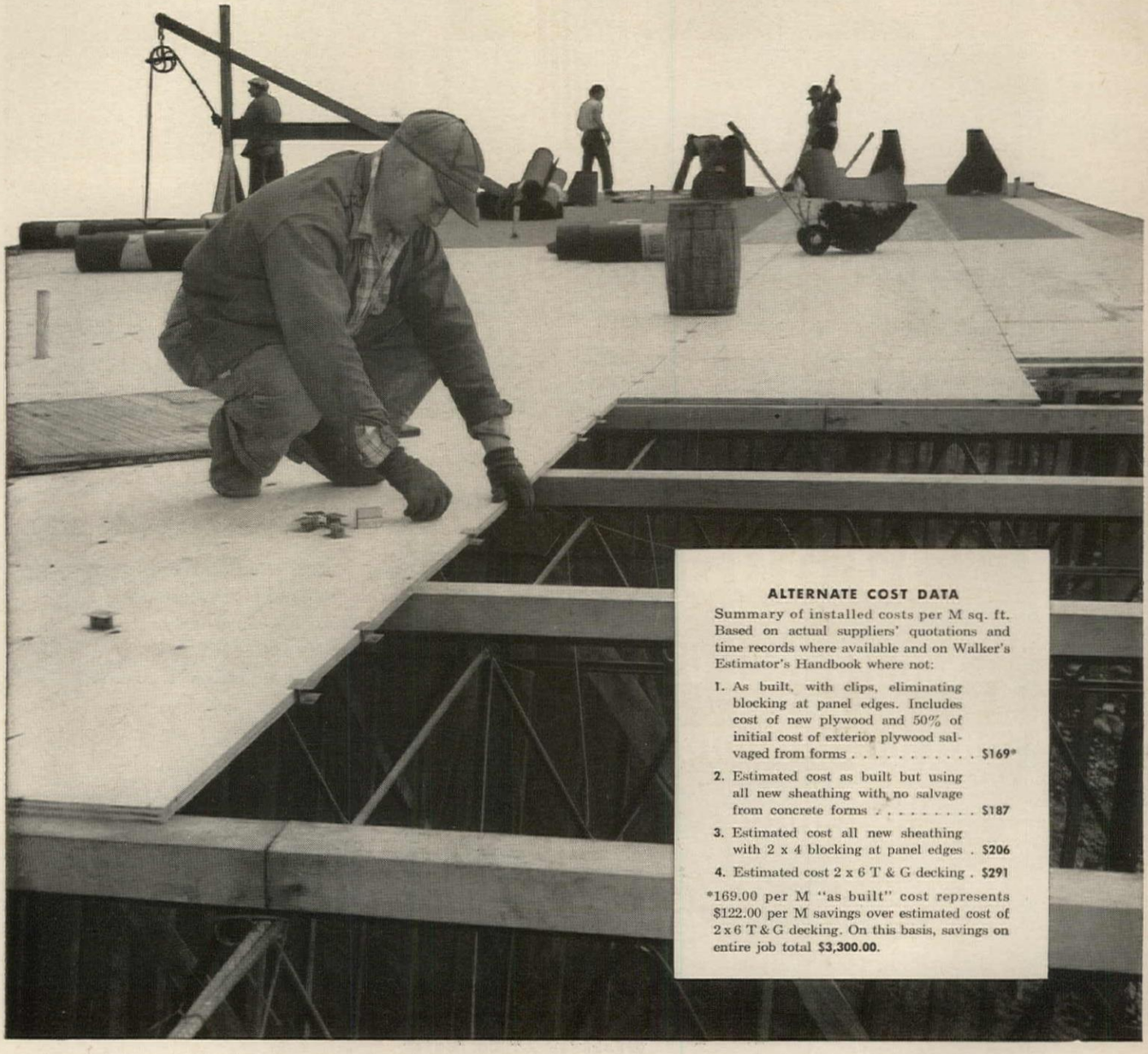
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**ALTERNATE COST DATA**

Summary of installed costs per M sq. ft. Based on actual suppliers' quotations and time records where available and on Walker's Estimator's Handbook where not:

1. As built, with clips, eliminating blocking at panel edges. Includes cost of new plywood and 50% of initial cost of exterior plywood salvaged from forms . . . . . $169*
2. Estimated cost as built but using all new sheathing with no salvage from concrete forms . . . . . $187
3. Estimated cost all new sheathing with 2 x 4 blocking at panel edges . $206
4. Estimated cost 2 x 6 T & G decking . $291

*169.00 per M "as built" cost represents $122.00 per M savings over estimated cost of 2 x 6 T & G decking. On this basis, savings on entire job total $3,300.00.

To eliminate 2 x 4 blocking, metal "H" clips were used at unsupported panel edges. Two clips were used for each span. (Clips were responsible for approx. $20 per M of savings; see table above).



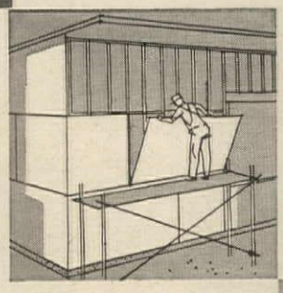
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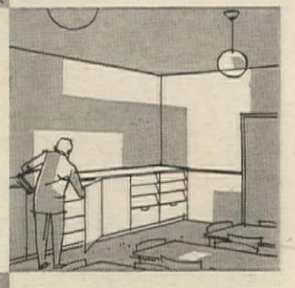
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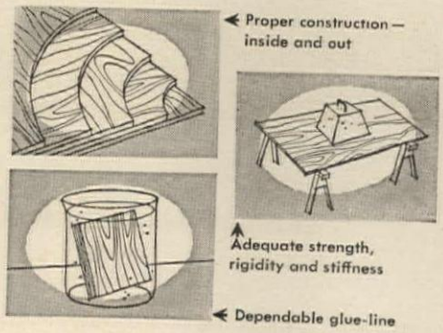
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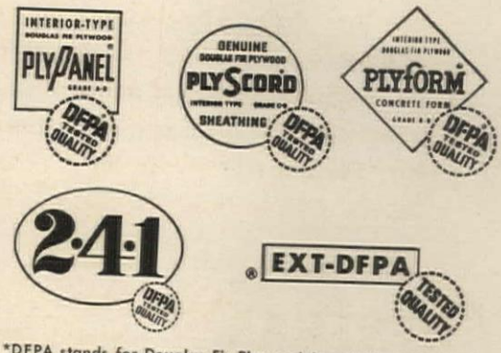



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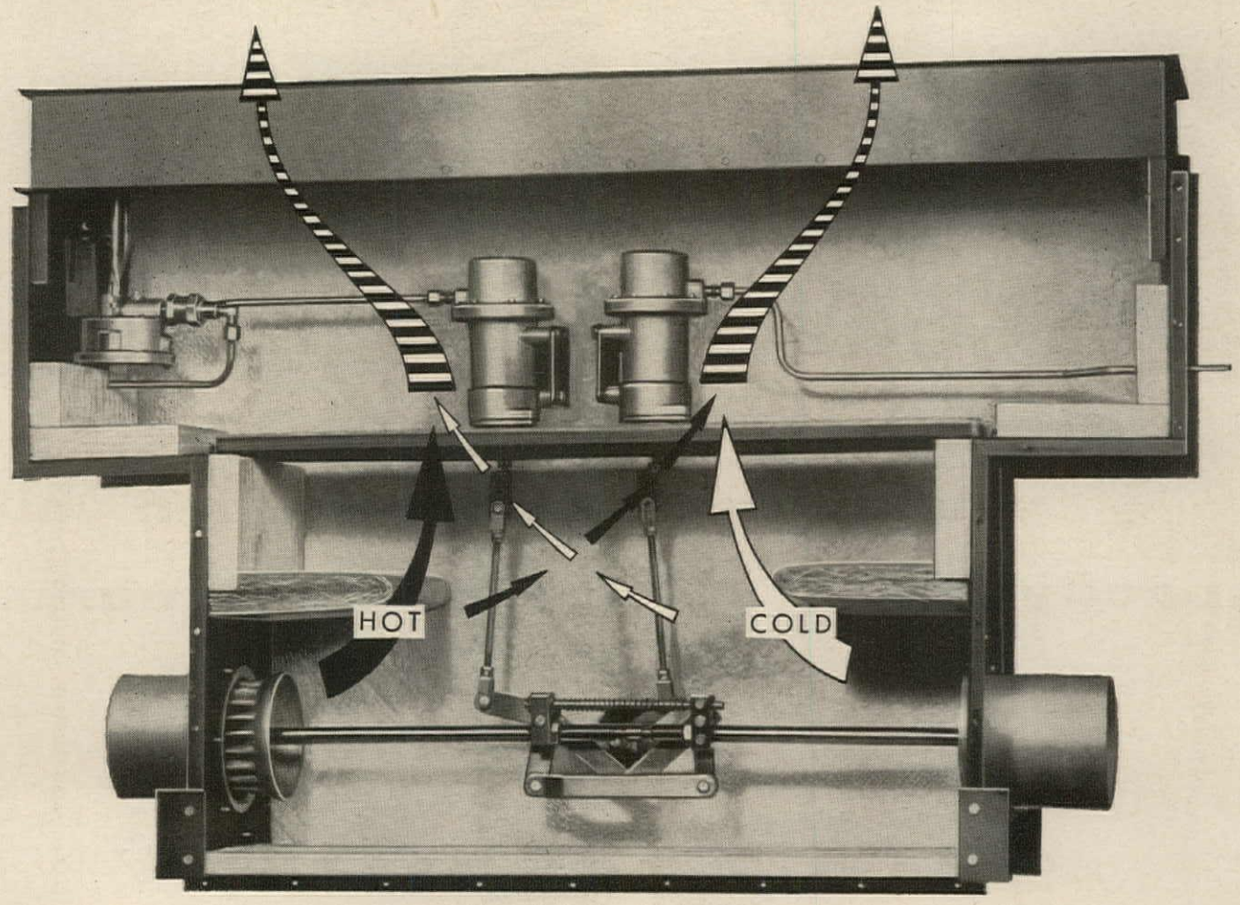
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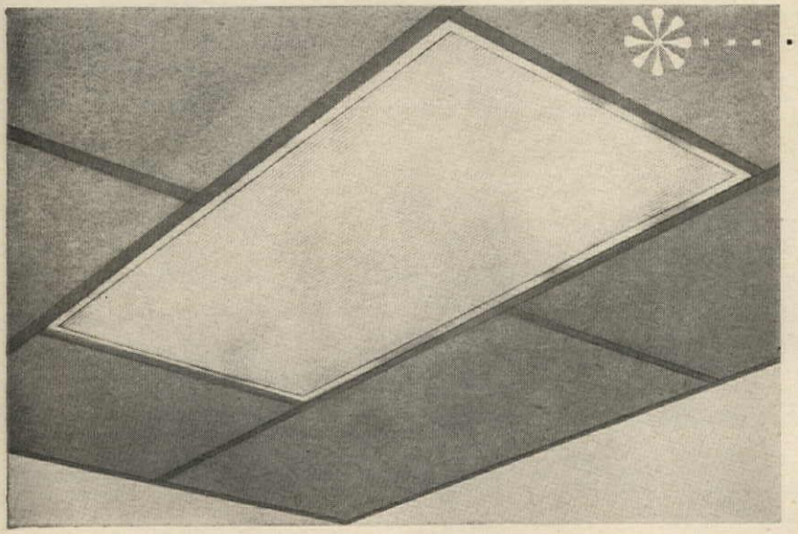
* Arthur W. Siegel, Massachusetts Representative, one of Smithcraft's nationwide sales organization

Smithcraft Troffers and other fine lighting units are installed in thousands of offices, factories, stores, schools and diversified interiors from coast to coast. Wherever good lighting is important, you'll find . . .

**SMITHCRAFT — "AMERICA'S FINEST FLUORESCENT LIGHTING".**

# . . . . . the man from *Smithcraft*

When you put his knowledge of lighting to work for you, your ideas turn into reality! His experience enables him to translate architectural concepts into effective lighting results. You can have confidence in his judgement because he knows how to adapt the flexibility of Smithcraft's line of lighting units into time-saving, economical solutions to lighting problems. Call him in to consult with you or your lighting engineers on any job on your boards . . . you'll find he knows blueprints and budgets as well as he knows lighting!



## . . . the 24" wide troffer from *Smithcraft*

Extremely versatile, architecturally integrated recessed lighting, Smithcraft two-foot wide troffers permit wide freedom in the creation of interesting and functional lighting patterns. They present a modern, trim, clean appearance free from light leaks or blemishes and with no visible catches, hinges, or screws. In glass or plastic-shielded units, a clean expanse of shielding is uninterrupted by cross-braces. Doors open or close with simple upwards pressure (patented) and simply lift off for maintenance. In louvered units, louvers are held by Smithcraft's patented Duo-Cam hangers. Louvers hinge from either side and are removed without tools or loose parts.

Smithcraft two-foot wide troffers are adaptable to today's most common ceilings. They are fast, easy and economical to install. There is a wide variety of shielding media available including Steel louvers (providing 30° x 30° shielding), Plastic louvers (42° x 42° shielding), Albalite glass, Corning Pattern #70 glass, Ribbed glass, Polycraft Plastic Dish and Acrylic Plastic.

*Smithcraft, a leader in the progressive design and development of fluorescent lighting fixtures manufactures a complete line of units specifically designed to meet a wide variety of lighting applications. The Smithcraft catalog contains pertinent and useful information on this line of fixtures and is a valuable aid in the design of lighting layouts or in ceiling planning. Make sure your copy is in your file. If it isn't, let us send you one.*



Smithcraft 2'-wide Metro Troffers provide 75 footcandles of extremely even illumination throughout Beerman's Department Store, Dayton, Ohio. Metro Troffers are lay-in troffers for inverted "T" Grid ceiling systems.

**Smithcraft**
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☐ Please send me the monthly publication, "Light Side of the News", so that I can keep in touch with the latest trends in lighting.

☐ Please send me "YOUR CEILING PLANNING COMES TO LIFE", a complete handbook on one and two-foot wide SMITHCRAFT ARCHITECTURAL TROFFERS.

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Lankenau Hospital/Health Center
ARCHITECT: Vincent G. Kling
CONTRACTOR: Wark & Company

Designed to incorporate all known technical and planning advances for buildings of its type, the new Lankenau hospital outside Philadelphia provides an excellent example of today's architectural achievements. Only the finest materials and products were used in its construction and completion. The "OVERHEAD DOOR" was selected for use wherever garage doors were needed. The fast, dependable and quiet operation of The "OVERHEAD DOOR" is well known to all architects and builders.

# HOSPITAL ASSURED OF DEPENDABLE GARAGE

**Location: Overbrook, Pennsylvania**

In site organization and plan, the new Lankenau takes full advantage of natural opportunities. Built on a former golf course, the buildings crown the highest portion of the land. The main driveway separates to reach parking areas and the garage, where in-and-out operation of vehicles is fast and easy with The "OVERHEAD DOOR."



**New Sweet's Catalog**—with separate spreads for each door and complete specifications on each spread—provides traceable details drawn to scale, plus a list of The "OVERHEAD DOOR" distributor service organizations.



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# DOOR OPENING WITH THE "OVERHEAD DOOR"

The "OVERHEAD DOOR" has enjoyed and appreciated the confidence of architects for more than three and a half decades. The requirements we meet, year after year, add up to a certainty of quality installation and service . . . by exclusively dedicated craftsmen.

The Overhead Door Corporation produces The "OVERHEAD DOOR" in sizes to fit all standard door openings . . . and is glad to cooperate on unusual size doors. America's pioneer and leader in upward-acting garage doors, the Overhead Door Corporation offers a complete line of doors—commercial and residential—with or without electric and Ultronic operators.

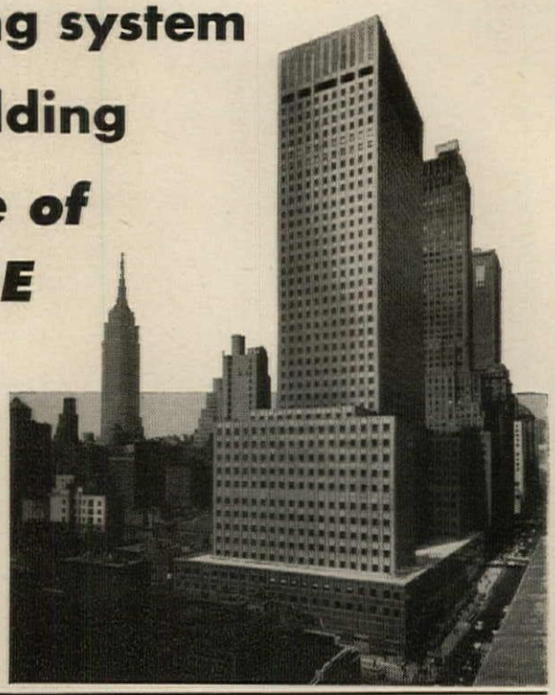
OVERHEAD DOOR CORPORATION, Hartford City, Ind.

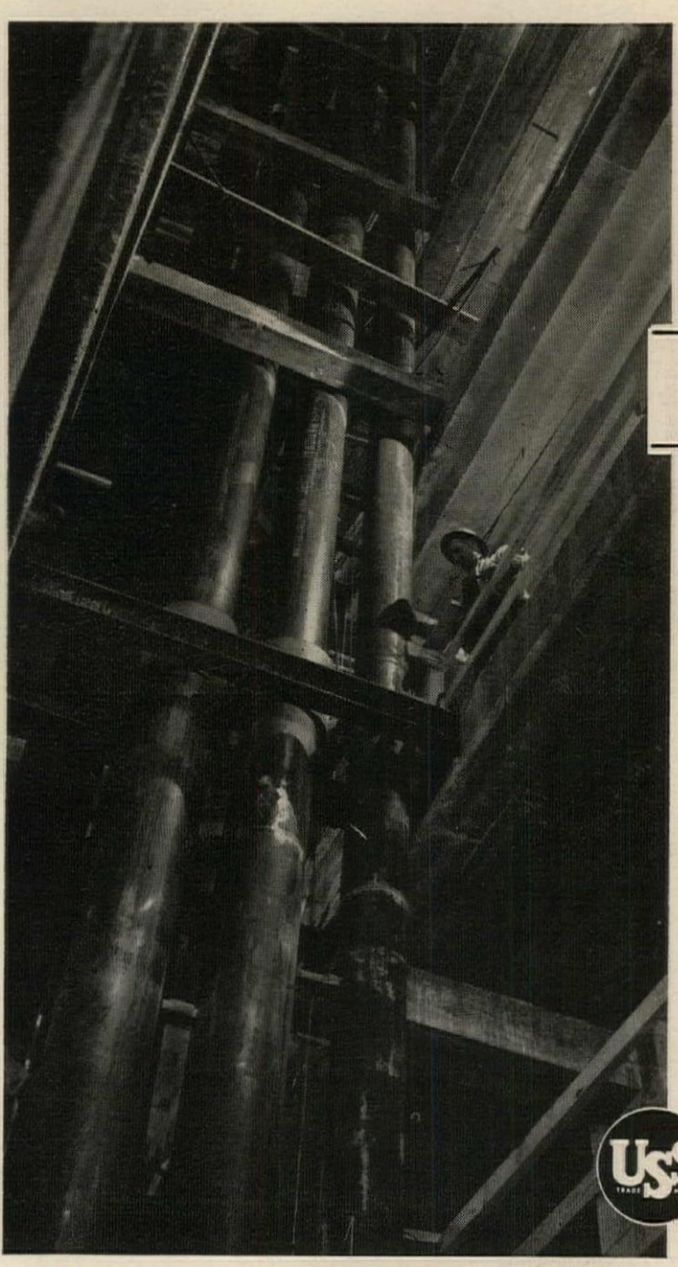
MANUFACTURING DIVISIONS: *Hillside, N. J. • Nashua, N.H. • Cortland, N.Y. • Lewistown, Pa. • Oklahoma City, Okla. • Dallas, Texas • Portland, Ore.*

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*Architects have specified* THE "OVERHEAD DOOR" TRADE MARK *more than any other brand!*

# Ingenious air-conditioning system of Socony-Mobil Building *makes liberal use of* NATIONAL PIPE





*Owner:* GALBREATH CORP., JOHN W. GALBREATH AND PETER B. RUFFIN
*Architects:* HARRISON & ABRAMOVITZ
*Associated Architect:* JOHN B. PETERKIN
*General Contractor:* TURNER CONSTRUCTION COMPANY
*Mechanical Engineers:* JAROS, BAUM & BOLLES

This gleaming, 45-story, stainless-steel-sheathed building is the largest air-conditioned office building structure ever erected. Its remarkable air-conditioning system is powered by purchased steam, which is actually used twice. In the basement there is a refrigeration plant, consisting of 3 centrifugal steam turbine driven compressors of 2600-ton capacity. These 3 units are driven by steam turbines operating full condensing, with the exception of one which is a partial condensing and exhaust. This exhaust steam, by means of a 10-inch steam main, is tied in with the building's steam distribution system. This 10-inch main serves, during summer operation, all the steam requirements for the tempering coils in the air-conditioning system, as well as the steam required for three 500 Lithium Bromide Absorption Machines. In other words, the three 500-ton units act as a surface condenser for the exhaust steam—the building enjoying the economics of this ingenious piping layout.

Approximately 470 tons of USS NATIONAL Pipe—most of it Seamless—were used in the construction of the air-conditioning and heating systems. And at least 350 tons of NATIONAL Seamless were used in the huge building's plumbing system.

As is so often the case in designing complex plumbing and heating systems, the engineers selected NATIONAL PIPE. They knew from past experience that, no matter how rigorous the conditions, NATIONAL would do the job, and do it well.

If you'd like more information on the use of NATIONAL PIPE in plumbing and heating, air-conditioning and power installations—large or small, simple or complex—get in touch with us. Our experienced engineering staff is at your service.

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**NATIONAL PIPE**

**UNITED STATES STEEL**




# You Can Buy a New Luxury Car Every Year with Savings on Each Westinghouse Operatorless Elevator You Install

**Automated (Operatorless) Elevators Cut Operating Costs up to $7000 per car per year**

If you're planning the construction of a new building—or thinking about modernizing an existing one—the operating economy of Westinghouse operatorless elevators is an overwhelming factor for consideration. With operatorless elevators, costs for attendant's wages, insurance, uniforms and training are eliminated . . . standard fixed charges are reduced . . . and tardiness and sickness problems are solved.

Westinghouse automated (operatorless) elevators "work" 24 hours a day . . . automatically. They operate themselves and adjust themselves to ever changing demands of building traffic . . . automatically.

So when you ask yourself, "How much do elevators cost?"—don't forget to consider the savings made possible by operatorless control.

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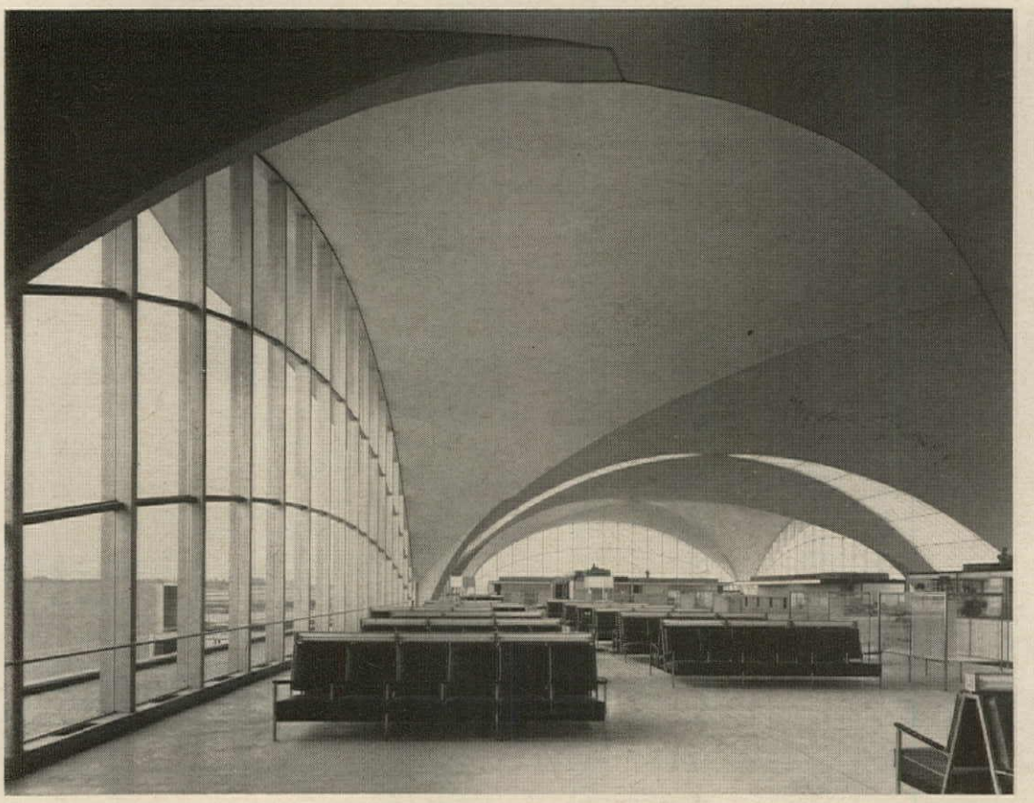
AUTOMATED **Westinghouse Elevators**
**AND ELECTRIC STAIRWAYS**

YOU CAN BE SURE...IF IT'S Westinghouse

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# Boldly designed St. Louis Municipal Airport effectively embodies the advantages of SOLEX® HEAT-ABSORBING, GLARE-REDUCING GLASS

A new concept in terminal design, the St. Louis Municipal Airport basically consists of three huge copper-sheathed domes, thirty-two feet high, having no internal supports and providing an unobstructed main passenger floor 412 feet long and 120 feet wide. On all sides, broad expanses of glass give a panoramic view of sky, planes and the surrounding countryside. For the entire main floor, *Pittsburgh's* Solex heat-absorbing, glare-reducing glass was utilized. The soft, greenish tint of this glass makes interiors more comfortable for passengers and personnel alike. Architects: Hellmuth, Yamasaki & Leinweber, St. Louis, Missouri.



Here is a view of the unobstructed main passenger floor. The arched walls of glass on all sides of the terminal provide a panoramic view of the exterior. Solex reduces glare from landing strips.



Your Sweet's Architectural File contains detailed information on all Pittsburgh Plate Glass Company products . . . Sections 7a, 13e, 16d, 21.

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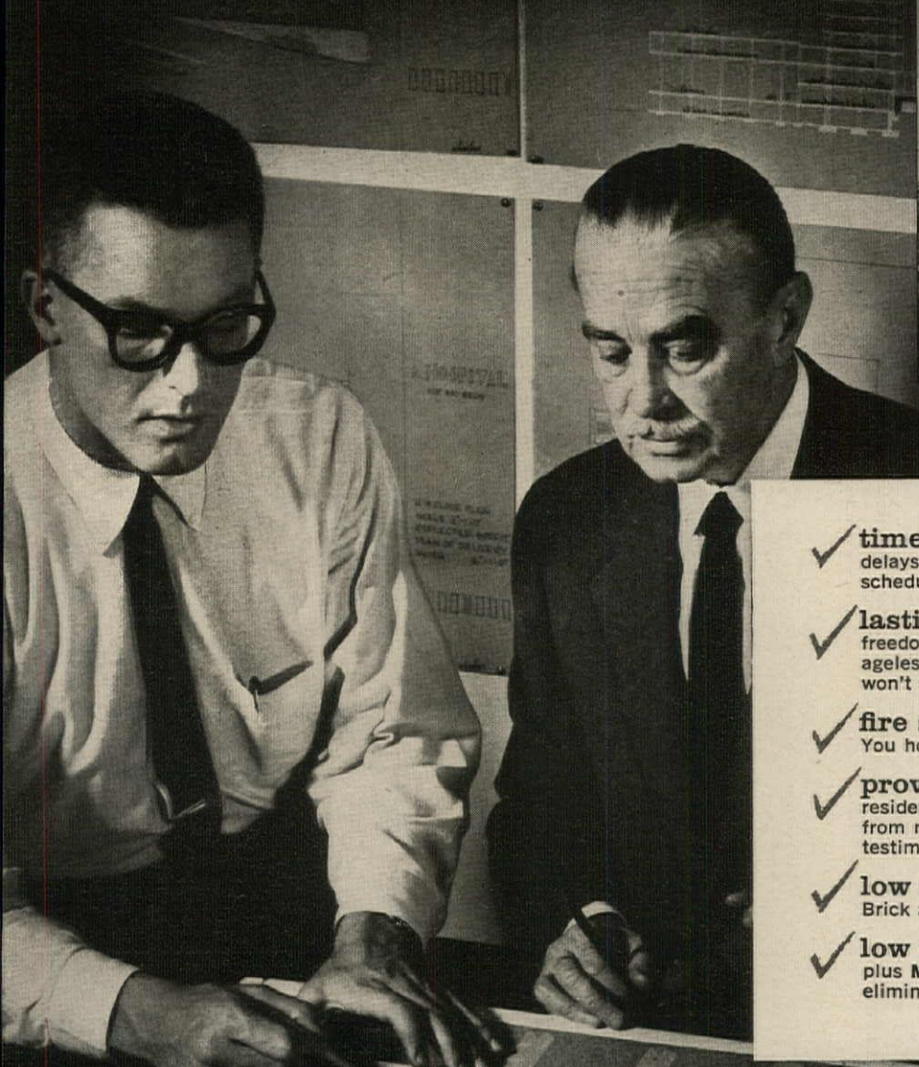
PITTSBURGH PLATE GLASS COMPANY

IN CANADA: CANADIAN PITTSBURGH INDUSTRIES LIMITED



This exterior view shows the majestic lines of the terminal, as well as the expansive areas of Solex and Pennvernon® window glass—the latter installed where heat and glare are not a consideration.

# check list for men who are building



▼ 711 Third Avenue, New York City.
Architect: William Lescaze



✓ **timely planning** ... awareness of possible shortages prevents delays and added costs. By building with load-bearing clay masonry **all** schedules are met, regardless of a pinch in structural steel supply.

✓ **lasting beauty** ... inspiring brick and structural tile give freedom of design, encourage imaginative modern concepts. Colors are ageless, textures richly varied, and material deterioration won't destroy your structure's character.

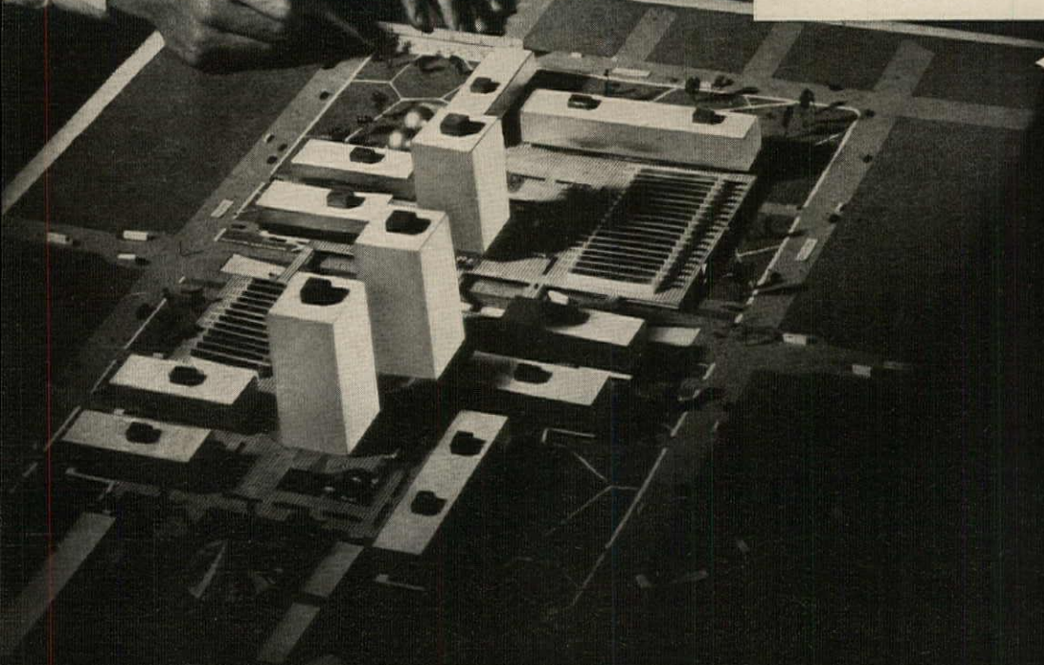
✓ **fire safety** ... guard against tragedy and save on insurance. You hold lives, investments, and the future in your hands.

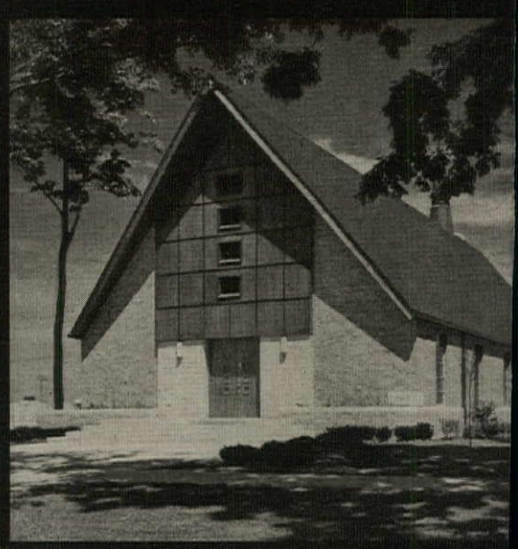
✓ **proved materials** ... brick and structural tile are time tested in residential, commercial, school and hospital buildings; eliminate dangers from materials still in the "experimental" stage. Sound construction is testimony to management's judgment and architect's talents.

✓ **low first cost** ... no strained budgets or unrealistic long-term debt. Brick and structural tile cost **less** per sq. ft. than other wall materials!

✓ **low maintenance cost** ... **Total Cost** equals **Original Outlay** plus **Maintenance Expense.** Durable brick and structural tile eliminate painting, refinishing, and replacement costs.

◀ Model by Pratt Institute students
Stuart Cohen, Stanley Kogan, Frank Marcellino

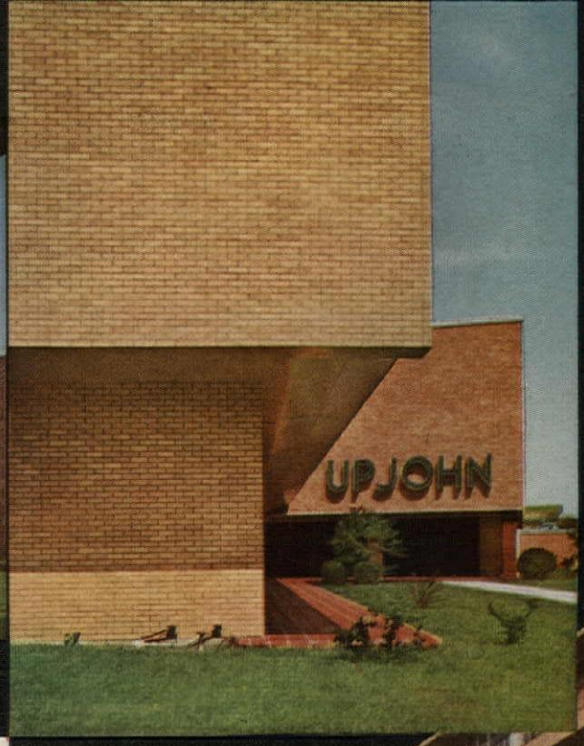




Pembroke Chapel, Detroit, Michigan.
Architect: Earl L. Confer ▲



▼ Carrolton Apartments, Baltimore, Maryland.
Architect: Joseph H. Fontz. Consultant: Henry P. Hopkins




Upjohn Company, Washington, D. C. ▶
Architect: The Austin Co.

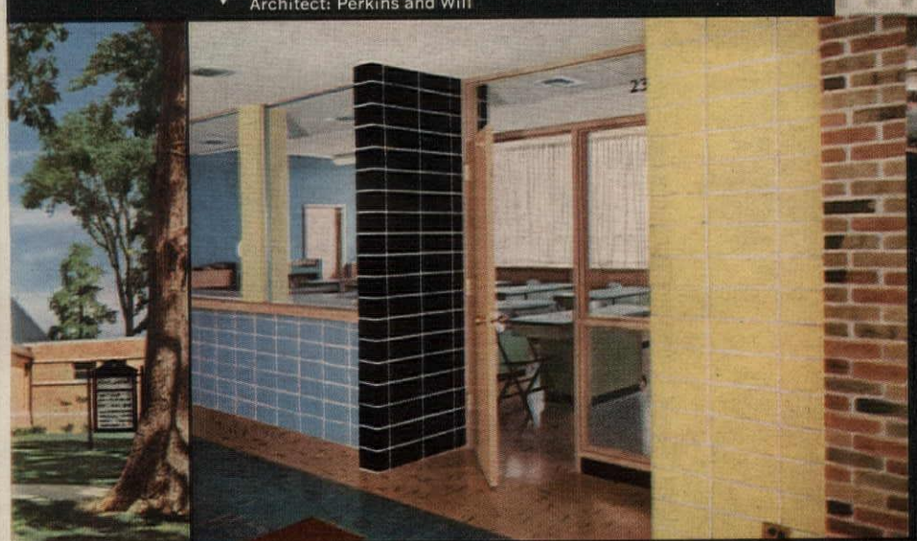
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▼ Wheaton Community High School, Wheaton, Illinois.
Architect: Perkins and Will





Bishop Clarkson Memorial Hospital, Omaha, Nebraska. △
Architect: The Leo A. Daly Architectural Engineering Co.

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# A roundup of recent and significant proposals



**THREE TOWERS IN CHICAGO CONSTRUCTION UPSURGE**

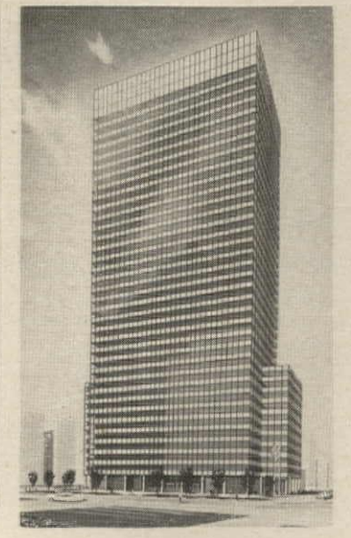
Successful leasing of the 41-story Prudential Building's premium rent space touched off a minor wave of other downtown structures. Two for investment groups headed by New Yorker Samuel W. Banowit were the 22-story Borg-Warner building (above) and a 36-story LaSalle and Clark St. tower. A. Epstein & Sons, Inc., were architects for both, with William Lescaze and New York's Diesel Construction Co. as architectural and building consultants on the former. On Wacker Dr. a 40-story reinforced concrete apartment hotel, aimed chiefly at transient trade, was started by Jerold Wexler from plans by Milton Schwartz.

ROSE & MAYER



First post-depression hotel

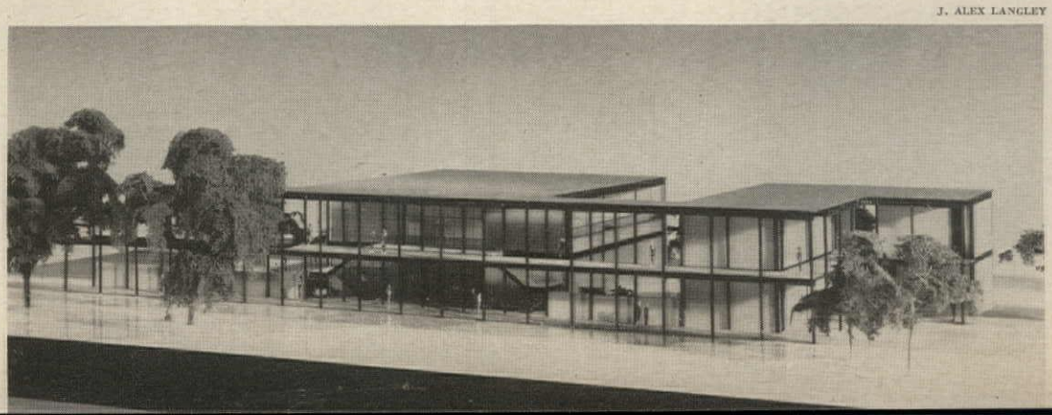
36-story LaSalle St. Tower



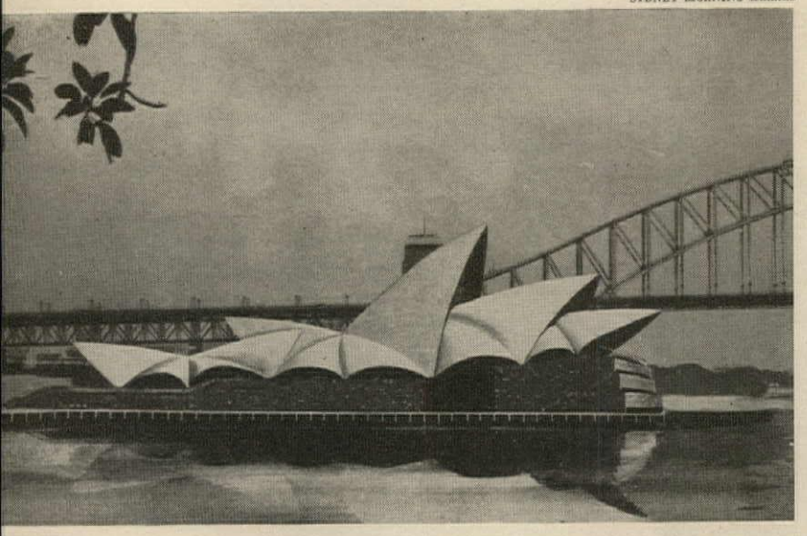
**TEXAS AUDITORIUM AND FINE ARTS BUILDING**

The Jesse H. Jones Memorial Auditorium, designed by Philip Johnson, will be the first part of a $5 million expansion program at the University of Saint Thomas, Houston. This two-story auditorium and fine arts building will cost about $250,000 (given by Houston Endowment Inc.) and will be built of pink-brown brick, glass and steel. The ground floor auditorium will seat 350; an art gallery will occupy the top floor.

J. ALEX LANGLEY



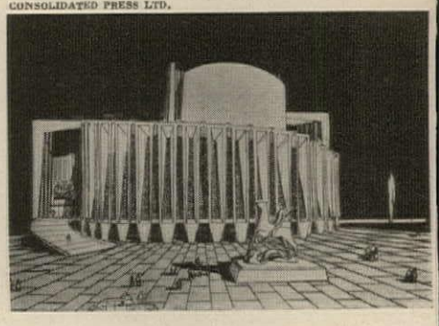
SYDNEY MORNING HERALD

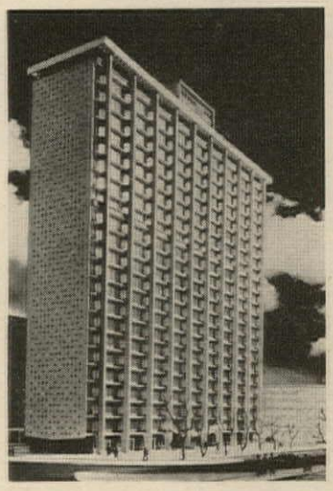


## OPERA CONTEST WINNERS

Danish Architect Joern Utzon, 37, won the first prize ($11,250) in the international competition for a harborfront opera house in Sydney, Australia, judged by Eero Saarinen, Sydney Architects Cobden Parkes and Professor Henry Ingham Ashworth, and London Architect John Leslie Martin. Utzon's billowing, sail-like, white-tile-on-shell-concrete structure (l) would cover two separated Greek amphitheaters, house additional meeting rooms, restaurants and bars. The 222 entries included 24 from US, and the second prize winner (r) returned $4,500 for a seven-architect team from Philadelphia: Joseph Marzella, Leon Loschetter, W. W. Cunningham, Walter Weissman, Melvin Brecher, Robert Geddes and George Qualls.

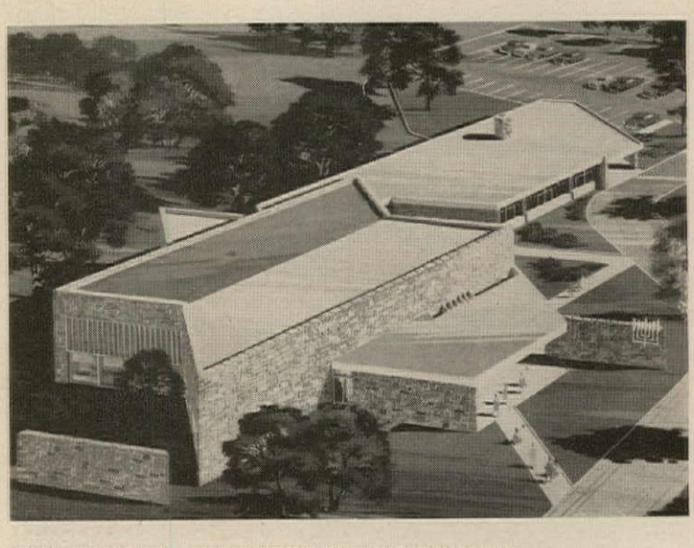
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## CAPETOWN TOWER

Sanlam Center, a 22-story office building in Capetown (l), will be the tallest building in the Union of South Africa. Designed by Meiring & Naudé, of Capetown, with New York's Kahn & Jacobs as consultants, it will have a concrete structural frame with only one center line of interior columns, two other rows of columns on the exterior. The paved terraces and plaza that occupy more than half its site will set "a welcome example," says South Africa's *Architect & Builder*.



## FIELDSTONE-AND-GLASS TEMPLE IN WESTCHESTER

Preliminary plans for a new temple, prepared by Architects Marcel Breuer and William Landsberg, were accepted by the Westchester Reform Temple; construction on a 6½ acre site in Scarsdale, N. Y., will start in the spring. The first two buildings (above) are the sanctuary, which will seat 420 people, and a six-room school wing. A social and assembly hall will be built later. A special feature of the sanctuary is a pulpit platform which projects forward into the congregation. The points of the star-shaped temple contain four classrooms, pulpit, and covered entrance (foreground).

## MARBLE WALLS FOR MANHATTAN'S TEXTILE DISTRICT

For a change of pace from glass and metal facades, the eight-story Milliken Building in the heart of New York's textile area will be sheathed on three sides with white Georgia marble above its granite base. On the front there will be grey glass spandrels, and this white and grey motif by Carson & Lundin, architects, will be repeated throughout the interior.

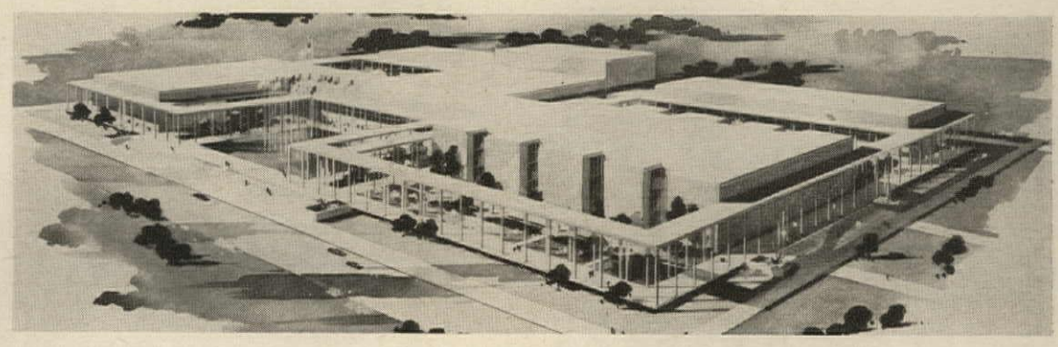


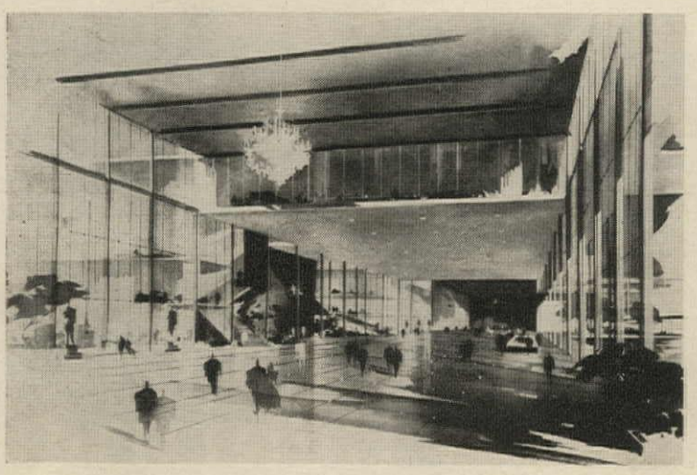
## WAVY WINDOW WALL

MAC MIZUKI

The serpentine wall of the Good Samaritan Home for the Aged in South St. Louis (r) provides a bay window for each room. The architects, Hellmuth, Obata & Kassabaum and Walter P. Manske, felt that the view of the Mississippi would be restful, especially to bedridden residents. Cost: $1.2 million.





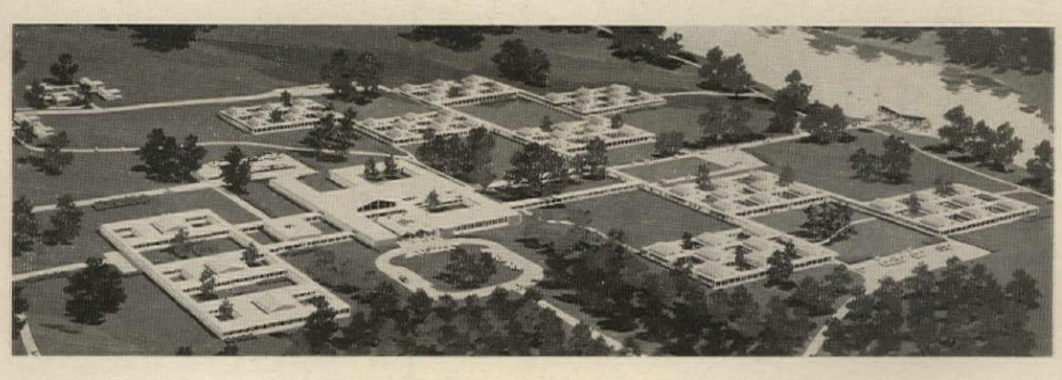


**CULTURAL CENTER PROPOSED FOR WASHINGTON**

Nongovernment funds would be used for construction, but Congress will be asked to provide the site for a $35 to $40 million national auditorium and cultural center in Washington that would resemble these schematic preliminary sketches prepared for the District Auditorium Commission by eight leading architectural, research and engineering firms captained by Pereira & Luckman as coordinating architects. Unified complex would have nine major elements: an $8.7 million Great Hall that could seat 10,000, would have 100,000 sq. ft. of unobstructed floor area; a 4,000-seat auditorium-music hall; a 1,400 to 1,800-seat theater; tourist information center; press and TV convention coverage facilities; a court of states; meeting rooms for small groups; restaurants and coffee shops, parking area for 1,500 to 2,000 cars. Vast entrance gallery (1), would have upper level restaurant.

**MODERN OLD FOLKS' HOME**

Waycross, Ga., is the site of Baptist Village, a community for retired people designed by Atlanta Architects Stevens & Wilkinson. Grounds for $3 million project total 536 acres. Seven-unit clusters of apartments (r) will have separate community center areas. Main building (center) will include chapel, stores; at left, medical-nursing center.



JACK STEVENS



**NUCLEAR RESEARCH LAB**

In San Diego, the General Atomic division of General Dynamics Corp. is building a $10 million John Jay Hopkins Laboratory for Pure and Applied Science (1) and also a $40 million atomic-astronautics laboratory complex (not shown). Pereira & Luckman are architects and engineers for both projects, including extensive site improvements for their 300-acre setting on Torrey Pines mesa. The pure and applied research laboratory will include science building (large circle), library, office and experiments building.

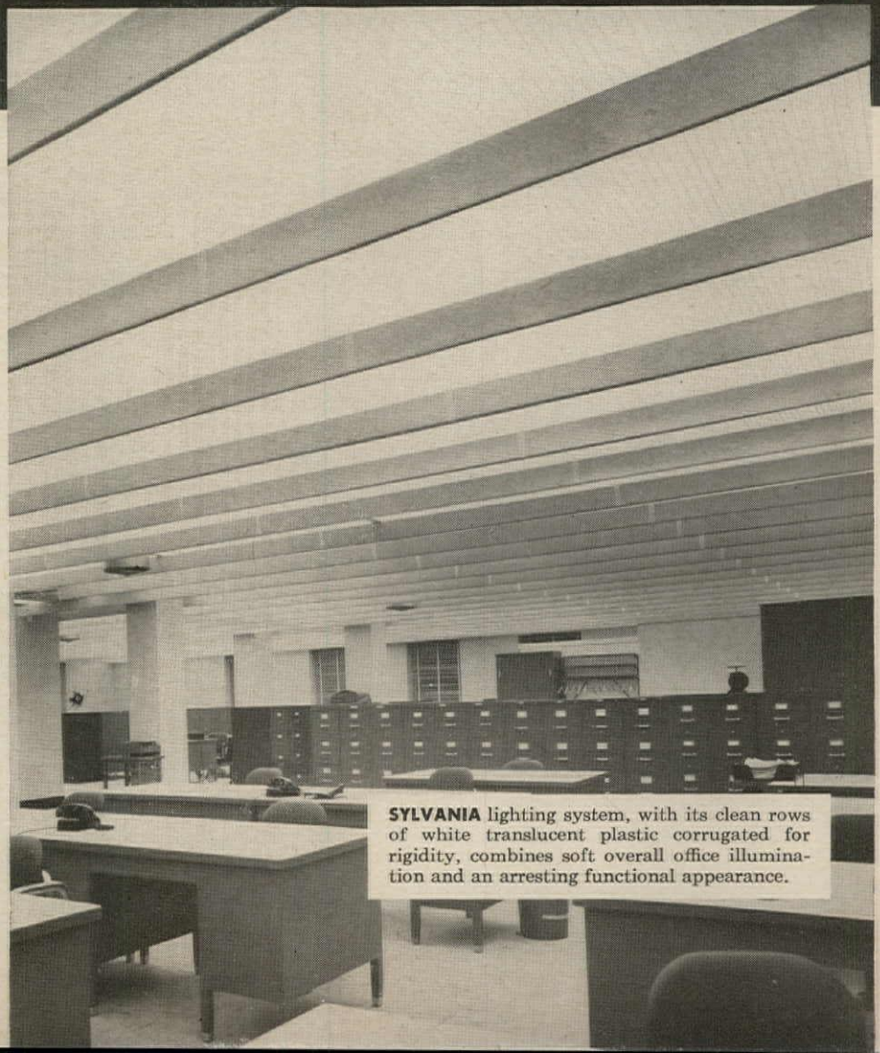
**SYLVANIA** wall-to-wall lighting illuminates over 93,000 square feet of floor space in the new general office building of West Penn Power Company at Cabin Hill, Greensburg, Pa.

# *Here's a new approach:*

# Use wall-to-wall lighting



**SYLVANIA** Sylvan-Aire lighting system—shown here with optional V-shaped "sono-wedge" feature—offers sight and sound control in corridors as well as offices.



**SYLVANIA** lighting system, with its clean rows of white translucent plastic corrugated for rigidity, combines soft overall office illumination and an arresting functional appearance.



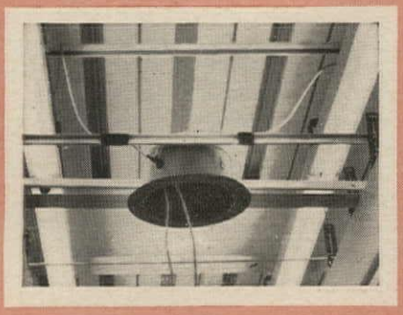
**Sylvan-Aire lighting** system: strip fixtures go in first



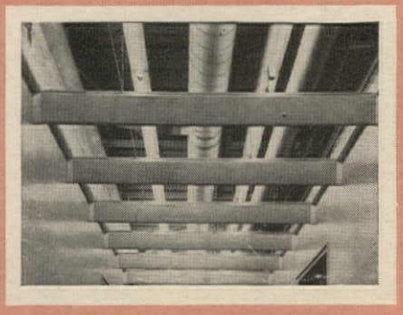
**Support channels,** "sono-wedges" are hung from fixtures



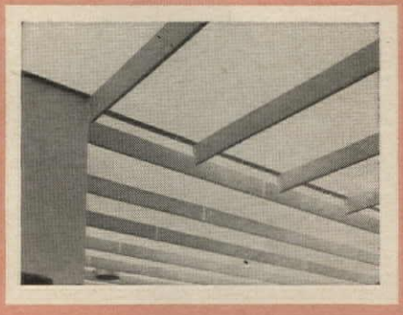
**Corrugated white plastic** is unrolled into channels



**System will fit** cleanly around air-conditioner diffusers, loudspeakers, etc.



**Covers piping, wiring,** yet leaves them easily accessible



**Completed installation** gives attractive functional lighting at *no extra cost.*

# for all offices and corridors

## Sylvan-Aire lighting system by Sylvania is used in striking treatment at new Cabin Hill, Greensburg, Pa., offices of West Penn Power Company

West Penn Power Company uses Sylvan-Aire wall-to-wall lighting to illuminate over 95% of the working area in its own new general office building at Cabin Hill, Greensburg, Pennsylvania.

A choice like this—by a major power company—marks a milestone in the development of modern lighting.

In planning their offices, West Penn Power management sought optimum working conditions for 600 executive and staff personnel. They located in an uncrowded area, away from big-city confusion, in the heart of their customer service area. They made a basic decision: that lighting is the environmental factor which most effects personnel, is most noticed by power company customers.

Architects Hoffman & Crumpton, Pittsburgh, together with consulting electrical engineers Carl J. Long Associates, specified wall-to-wall lighting for over 93,000 square feet of ceiling area. Included were all types of workrooms—general and private offices, corridors, and drafting rooms. Then electrical contractors Howard P. Foley Company selected Sylvan-Aire, Sylvania's wall-to-wall lighting system. With it they could meet all specs, bid low, then go on to effect untold savings in labor with Sylvania's *time-saving tool-free* hanging methods.

Sylvan-Aire by Sylvania brings West Penn Power a new and different office lighting. It maintains needed high footcandle levels with an overall light that is soft and diffused in quality. It creates a shadow-free, glare-free effect on desks and working surfaces. Its clean functional design presents a pleasing efficient appearance, helps promote good relations with employees and visitors alike.

More important—management saves on construction. They get equivalent of lighting and ceiling for cost of lighting system alone. They save on maintenance, too, because Sylvan-Aire is designed for ease of cleaning and lamp changing.

The Sylvania Fixture Specialist in your area is ready to talk over your individual lighting problems, and the latest developments in lighting systems—at your request. Give him a call. Or if you prefer, *write direct for your FREE copy of our complete new data book on "The Modern Method of Wall-To-Wall Illumination and Sound-Conditioning."*

SYLVANIA ELECTRIC PRODUCTS INC.
Lighting Systems, Dept. C20
One 48th Street, Wheeling, W. Va.

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***. . . fastest growing name in sight***

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## Gamewell offers a new concept to fire protection engineering...

# FLEXALARM Fire Alarm System Planning Guide




Flexalarm F249 Planning Guide includes data on (1) Basic System plans and their integration; (2) Major Components and their function; (3) Fifty-two systems which answer specific requirements; and (4) Definitions of terms used in the fire alarm industry.

F249 is uniquely arranged for quick reference and will be supplemented on a periodic basis with additional data on fire alarm systems.

**The Flexalarm System includes these major functions and their integration**



Audible Signals



Recording Sets

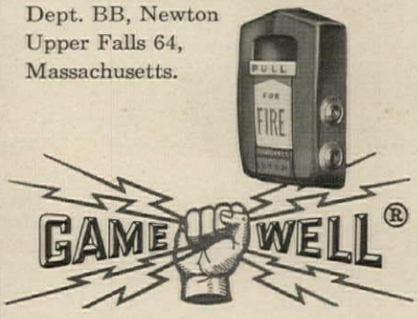



Control Units . . . integrating extensive combination of functions, including annunciating, battery standby, automatic detection, coded stations and special drill and test features.

Here's a new and simplified approach to the design, application and specification of interior fire alarm systems — the Gamewell Flexalarm Catalog No. F249. It is available to you without charge.

Over 96 pages of information and technical data on the Flexalarm System have been compiled by Gamewell. It includes suggested systems and layouts, gives you a complete one-source reference for specifying the best possible protection against the hazards of fire.

**Send for Flexalarm F249 Now!**
Save valuable time, make sure your plans include the most modern fire alarm systems available. F249 can be used to write a complete specification or as the basis for special systems as required. Request your copy from: The Gamewell Company, Dept. BB, Newton Upper Falls 64, Massachusetts.




**THE GAMEWELL COMPANY**
**Newton Upper Falls 64, Mass.**

Flexalarm is a special line of fire alarm signal systems designed for general industrial, commercial and institutional applications. It features a new building-block concept, based on Gamewell experience in signaling and communications — allowing the architect, engineer, and user to tailor a fire alarm system exactly to needs . . . for maximum protection at minimum cost.

GA 6-31

# Tight money hurdles now expected to trim 1957's construction spending gains

Construction got off to a good but not spectacular start in January, when total expenditures set a record for the month, 3% higher than during January 1956, by estimates of the Commerce and Labor departments (see chart and table). Private nonresidential building was a substantial 11% greater than a year earlier, and total public construction up 12%, more than offsetting the considerable, continued lag in private homebuilding.

Nevertheless, in view of persistent tight money conditions—and developments such as curtailments of nonurgent federal construction like GSA and Post Office lease-purchase building (p. 5)—industry observers were beginning to temper a little their earlier forecasts on the margin by which this year's building outlays would exceed last year's. Last month, FORUM Economist-Consultant Miles L. Colean, who foresaw almost a 6% increase in his forecast published last October (five months ago) reported:

"The pattern for the year now appears to be shaping up something like this: little or no increase in total volume; some decline in total private activity; a still strong, though somewhat moderated advance in government construction.

"Both commercial and industrial construction will make lower gains than previously forecast, while private housing, after a discouraging start, should be on the upturn by midyear, with 1 million starts still probable."

Explaining the significance of January expenditures for different categories of construction, particularly in comparison with Jan., '56, Colean said: "Though private nonresidential spending in January was 11% ahead of Jan., '56, even this rate of growth represents some slowing of the rapid rate of expansion at the same time a year earlier. Thus industrial construction, which from April to October showed gains of 25% to 35% over corresponding months, now is moving ahead at 20% above a year ago. Warehouse, loft and office construction settled back to a 15% improvement over Jan., '56, after showing gains of 23% to 24% last summer and fall over comparable 1955 periods.

"The most serious weakness is showing up in the store-restaurant-garage category. Since August such expenditures have fallen behind corresponding months' levels. Public utility construction gains have also slackened somewhat and are now only 3% ahead of their volume a year ago."

### Less work, more workers

In an analysis of 1956 building trends in the latest issue of their *Construction Review*, Commerce and Labor authorities note that the industry's outlays, costs, employment and wages all rose to new heights last year. Confirming observations made in these columns two months ago, however, the second paragraph of this government report also points out that: "Despite peak expenditures, 1956 was the first post-World War II year to witness an apparent decline in the physical volume of construction . . . in 1947-49 prices . . . [a

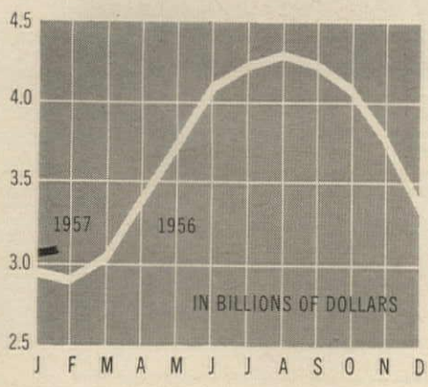
*continued on p. 45*

**SPENDING BY BUILDING TYPES**

*(millions of dollars)*

| | — January — | | |
|---|---|---|---|
| | 1957 | 1956 | %± |
| PRIVATE BUILDING | | | |
| Residential (nonfarm).. | 1,014 | 1,080 | — 6 |
| Nonresidential ..... | 719 | 650 | +11 |
| Industrial ..... | 268 | 223 | +20 |
| Commercial ..... | 244 | 251 | — 3 |
| Offices; lofts; warehouses ..... | 121 | 105 | +15 |
| Stores; restaurants; garages.... | 123 | 146 | —16 |
| Religious ..... | 68 | 58 | +17 |
| Educational ..... | 43 | 41 | + 5 |
| Hospital; institutions | 33 | 26 | +27 |
| Public utilities ..... | 350 | 341 | + 3 |
| *PRIVATE TOTAL.. | 2,185 | 2,176 | ** |
| PUBLIC BUILDING | | | |
| Residential ..... | 29 | 20 | +45 |
| Nonresidential ..... | 324 | 293 | +11 |
| Industrial ..... | 33 | 36 | — 8 |
| Educational ..... | 211 | 190 | +11 |
| Hospital; institutions. | 23 | 20 | +15 |
| Military ..... | 97 | 87 | +11 |
| Highways ..... | 220 | 215 | + 2 |
| Sewer; water ..... | 100 | 82 | +22 |
| *PUBLIC TOTAL.... | 861 | 771 | +12 |
| *GRAND TOTAL.... | 3,046 | 2,947 | + 3 |

** Minor components not shown, so total exceeds sum of parts.*
*** Less than 1%.*




TOTAL EXPENDITURES for new construction in January were $3,046 million, according to Commerce and Labor estimates. This was a January record, the first time outlays started the year over the $3 billion a month mark.

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## Offers The World's Most Complete Line of Quality Fluorescent Lamp Ballasts




Through outstanding engineering developments and modern manufacturing facilities, ADVANCE TRANSFORMER COMPANY has become the world's largest manufacturer devoted exclusively to the production of quality fluorescent lamp ballasts. These precision built, power regulating instruments supply exacting amounts of electrical energy for the efficient operation of all fluorescent lamps and are aptly called "THE HEART OF THE LIGHTING INDUSTRY."

Continuing research and constant new developments in both engineering and manufacturing divisions have made possible the introduction of many new ballasts with exclusive patented features. Thus, ADVANCE provides lighting equipment manufacturers, designers, architects, engineers, contractors and other fluorescent lamp ballast users the world's most extensive line of fluorescent lamp ballasts. When you use ADVANCE, there is a ballast for every specific purpose, never a need to compromise.

ADVANCE ballasts are listed by Underwriters' Laboratories, Inc., meet the Canadian Standards Association requirements and many meet or exceed Certified Ballast Manufacturers' specifications. Specify ADVANCE to be sure to get the ballasts with the "plus factors" that have built the world's largest company devoted exclusively to the manufacture of fluorescent lamp ballasts.

The Advance Transformer Company will replace, at no charge, any ADVANCE fluorescent lamp ballast which becomes inoperative within two years from date of manufacture, provided the conditions of ballast operation have conformed to the company's recommendations and the inoperative ballast is returned to an authorized ADVANCE Service-Stocking Distributor.

For anyone who manufactures, specifies, installs or uses fluorescent lighting, ADVANCE TRANSFORMER COMPANY has prepared helpful literature which they will gladly send without cost or obligation.

### Fluorescent Lamp Ballast Buyer's Guide

This eight-page brochure gives data on the world's most complete line of Fluorescent Lamp Ballasts. It includes specifications, wattage, watt loss, circuit voltage, dimensions, weight, etc. This brochure is an invaluable aid for specifiers and users of fluorescent lamp ballasts.

### Fluorescent Lamp Ballast Cross Reference Guide

This helpful guide lists many popular ballasts by catalog number and the ADVANCE ballast that should be used whenever ballast replacement becomes necessary. It is an invaluable reference chart that saves time and money for all users of fluorescent lamp ballasts.

### Service-Stocking Distributor Plan and List of Distributors

This is a six-page color brochure that lists, by city and state, more than 550 distributors who carry a stock of ADVANCE Fluorescent Lamp Ballasts, to provide immediate replacement service for *ballasts of any make* that become inoperative.

You may receive a copy of one or all of these brochures by writing ADVANCE TRANSFORMER COMPANY, Marketing Division, 2950 North Western Avenue, Chicago 18, Illinois.

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decrease] by 2% from the record set in 1955."

Curiously, however, a three-page press release on this study in the *Review* issued jointly by the two departments made no mention of this situation, but by citing mainly spending and employment records could give the public or other uninformed public officials the impression there was more actual construction in 1956 than 1955, rather than apparently less.

The *Review* noted that construction employment last year "expanded to an all-time peak of 3,353,000 workers in August, and for the year as a whole averaged about 3 million per month." This was an increase of about 9% over the 1955 average of 2,780,000 per month. The *Review* itself offered no explanation, however, nor even any comment, on this puzzling 9% increase in employment to build seemingly 2% less physical volume of construction.

## Permit values off in '56 in eight large cities

Although the total value of building permits for 217 cities reporting to Dun & Bradstreet rose 4.6% last year, decreases occurred in 8 of the 20 cities that reported the largest permit volumes in 1955. These loss leaders were: Dallas, Philadelphia, Detroit, New Orleans, Baltimore, Atlanta, Kansas City and Washington.

New York, with its booming wave of office construction (p. 104) led all other cities again last year in both total permit values and (among the top 20 cities) in percentage of increases over 1955. Its 1956 permits soared to $861 million, an increase of $194 million, or a whopping 29.1% over 1955.

There were two casualties from the top-20 list of permit cities last year: Atlanta, which ranked 14th in 1955, and Kansas City, 18th. Replacing them on the list, in 17th and 18th positions, were Cincinnati and Columbus, Ohio, which ranked 21st and 25th in 1955.

**BUILDING PERMITS BY CITIES**

*(in millions of dollars)*

| | 1956 | 1955 | % change | 1955 rank |
|---|---|---|---|---|
| New York | $861.6 | $667.4 | +29.1 | 1 |
| Los Angeles | 485.0 | 433.3 | +11.9 | 2 |
| Chicago | 329.6 | 262.8 | +25.4 | 3 |
| Houston | 151.4 | 137.1 | +10.4 | 7 |
| Dallas | 136.0 | 167.0 | —18.6 | 4 |
| Philadelphia | 134.0 | 147.1 | — 8.9 | 5 |
| Detroit | 111.2 | 142.8 | —22.1 | 6 |
| San Diego | 105.0 | 85.5 | +22.8 | 11 |
| Milwaukee | 103.0 | 85.3 | +20.7 | 12 |
| Denver | 102.1 | 100.0 | + 2.1 | 9 |
| Cleveland | 89.0 | 79.0 | +12.6 | 13 |
| New Orleans | 83.0 | 99.0 | —16.2 | 10 |
| Seattle | 80.1 | 72.0 | +11.2 | 15 |
| Baltimore | 77.0 | 105.0 | —26.7 | 8 |
| Long Beach | 68.0 | 61.0 | +11.5 | 19 |
| San Francisco | 66.1 | 65.0 | + 1.7 | 17 |
| Cincinnati | 63.0 | 58.0 | + 8.6 | 21 |
| Columbus | 61.0 | 50.1 | +21.8 | 25 |
| San Antonio | 60.5 | 59.2 | + 2.2 | 20 |
| Washington | 60.2 | 67.6 | —10.9 | 16 |

COSTS

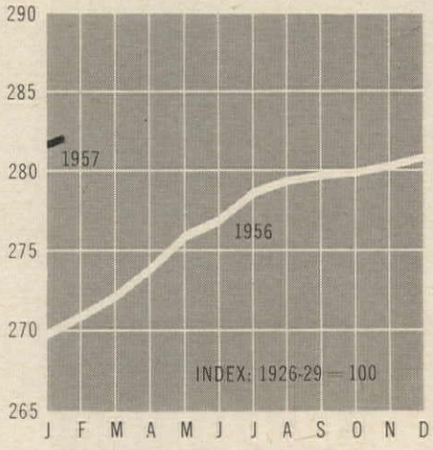
## New York office towers cost $13 to $62 per sq ft., but figures are not truly "comparable"

When New York realtors are asked about the cost or value of a property, and they wish to indicate how meaningless a general reply would be, they often resort to a rhetorical retort: "So, what's the price of a six-story apartment in the Bronx?"

It is likewise impossible to give any conclusive answer to the question: "What are the building costs for all those new office structures being put up in New York these days?" (p. 104).

Peculiarities of any building job keep it from matching any so-called "average" cost just as surely as individual personality keeps any person from ever being an exactly "average" man—or an "average" builder. Shape of the building, type and quality of construction, special features, different foundation conditions, are just a few of the elements that have a role in the final cost of any structure.

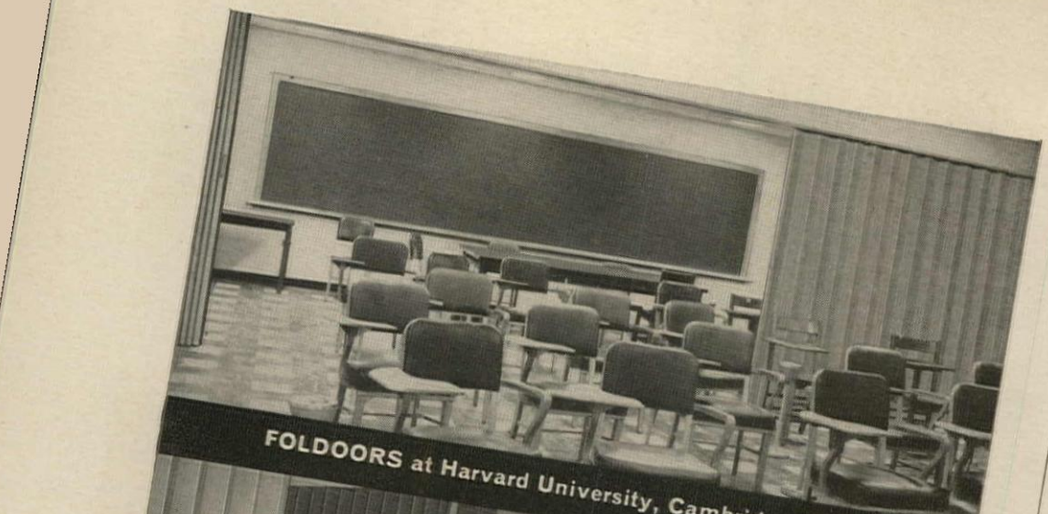
However, with the warning that they are not "comparable" with each other, because they were not all built at the same time, under the same conditions, or to the same specifications, there are given below the indicated usable or "rentable" square foot approximate costs of a selection of New York's several score postwar office towers. Generally costs are based on published estimates of owners or builders, and the area as reported by the Real Estate Board of New York. Most of these figures, it is believed, include land costs. On a broad rule of thumb that most New York office builders have been achieving rentable areas about 15 times plot sizes, and sites have cost from about $75 to $150 per square foot in different areas and in different stages of the city's current office site land boom, the land costs that could be deducted from most of following totals would range from $5 to $10 per square foot of rentable areas, the balance being strictly construction costs:



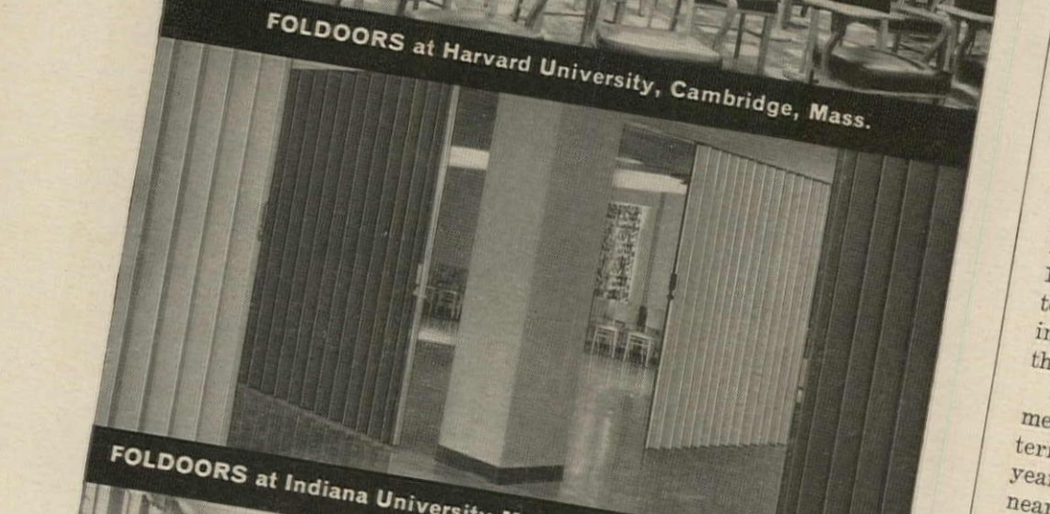

CONSTRUCTION COSTS for nonresidential building advanced 0.2% in January to a peak of 281.3 on the index of E. H. Boeckh & Assoc. This was 4.2% higher than in January, '56.

| Building | Rentable sq. ft. | Cost per sq. ft. | Year built |
|---|---|---|---|
| Esso | 422,500 | $23.67 | 1947 |
| Lever House | 235,000 | 25.53 | 1951 |
| US Rubber | 340,000 | 32.35 | 1955 |
| 1430 Broadway | 320,000 | 15.63 | 1955 |
| Socony Mobil | 1,300,000 | 34.62 | 1956 |
| Coliseum-Office | 531,000 | 30.00 | 1956 |
| 20 Broad St. | 414,000 | 14.49 | 1956– |
| 110 William St. | 682,000 | 21.99 | 1956– |
| 123 William St. | 410,000 | 13.17 | 1956– |
| 530 Fifth Ave. | 407,000 | 24.57 | 1956– |
| 666 Fifth Ave. | 1,085,000 | 36.87 | 1956– |
| Canada House | 153,000 | 39.22 | 1956– |
| 650 Madison | 266,000 | 22.56 | 1956– |
| House of Seagram | 618,000 | 32.36 | 1956– |
| 425 Park Ave. | 460,000 | 13.04 | 1956– |
| 750 Third Ave. | 630,000 | 15.87 | 1956– |
| Union Dime | 500,000 | 30.00 | 1956– |
| Chase Manhattan | 1,600,000 | 62.50 | 1957– |
| 2 Broadway | 1,100,000 | 22.73 | 1957– |
| Union Carbide | 1,150,000 | 40.00 | 1957– |
| Time-Life | 1,400,000 | 50.00 | 1957– |
| 575 Lexington Ave. | 580,800 | 20.66 | 1957– |
| 200 East 42d St. | 350,000 | 34.29 | 1957– |
| Astor Plaza | 1,200,000 | 62.50 | 1958– |
| 33 West 51st St. | 1,600,000 | 34.38 | 1958– |
| Corning Glass | 380,000 | 24.21 | 1958– |

TRENDS *continued on p. 46*



FOLDOORS at Harvard University, Cambridge, Mass.



FOLDOORS at Indiana University Medical Center, Indianapolis, Ind.



FOLDOORS at Waynesville (North Carolina) High School

● More and more leading architects are specifying FOLDOOR in more and more prominent places.

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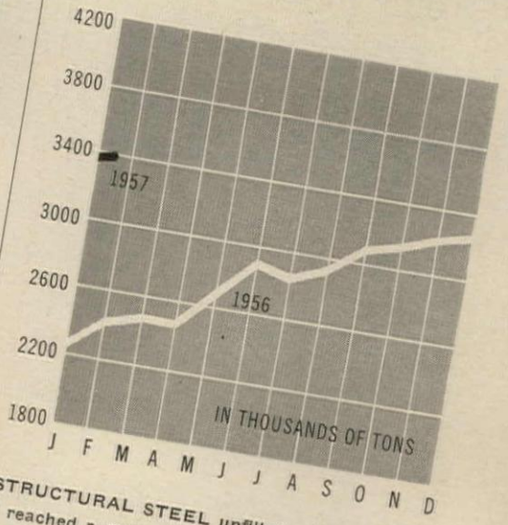

BUILDING MATERIAL

## Prices up; but 1956 out of some items fell

Average wholesale building mate prices edged upwards by just a t in January, mainly through some fi ing in depressed lumber and wo products prices, still 3.9% below Ja 1956. This BLS index component ro from 121.0 in December to 121.4 i January.

With the exception of metal doors sash and trim, down 1.3%, and gypsum products—no change—all other items in this index were up from 1.8% to 13.7% (structural steel) from January-to-January, and the composite adjusted index for all materials was 1% higher than a year ago.

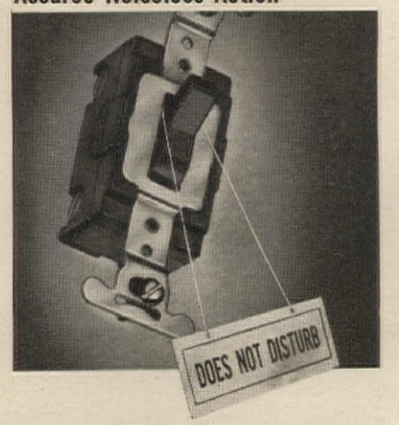
Excluding steel, and sometimes ce- ment, production of most building ma- terials kept pace with construction last year; "demand and supply were more nearly in balance than in the past several years," according to the Com- merce and Labor departments. "By the end of the year," said their reports, "producers of key materials were mak- ing moderate downward adjustments in production. . . [output for 12 months] pointed to levels somewhat lower than those of 1955, or equal to them. For the first nine months of 1956. . . asphalt products, plumbing fixtures, heating, and plumbing equipment and lumber and wood products were down 3 to 6%."




STRUCTURAL STEEL unfilled orders on Jan. 1 reached a new peak of 3,373,375 tons, or 50% over the backlog of 2,243,046 tons in January, 1956. This backlog, as 1957 began, was also 5% greater than the industry's total shipments all through 1956, which set a record of 2 488 tons, as computed by [illegible] tute of S[illegible]

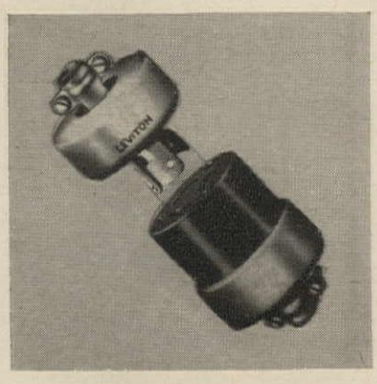
# PRODUCT NEWS

## Leviton "Quiet Switch" Assures Noiseless Action



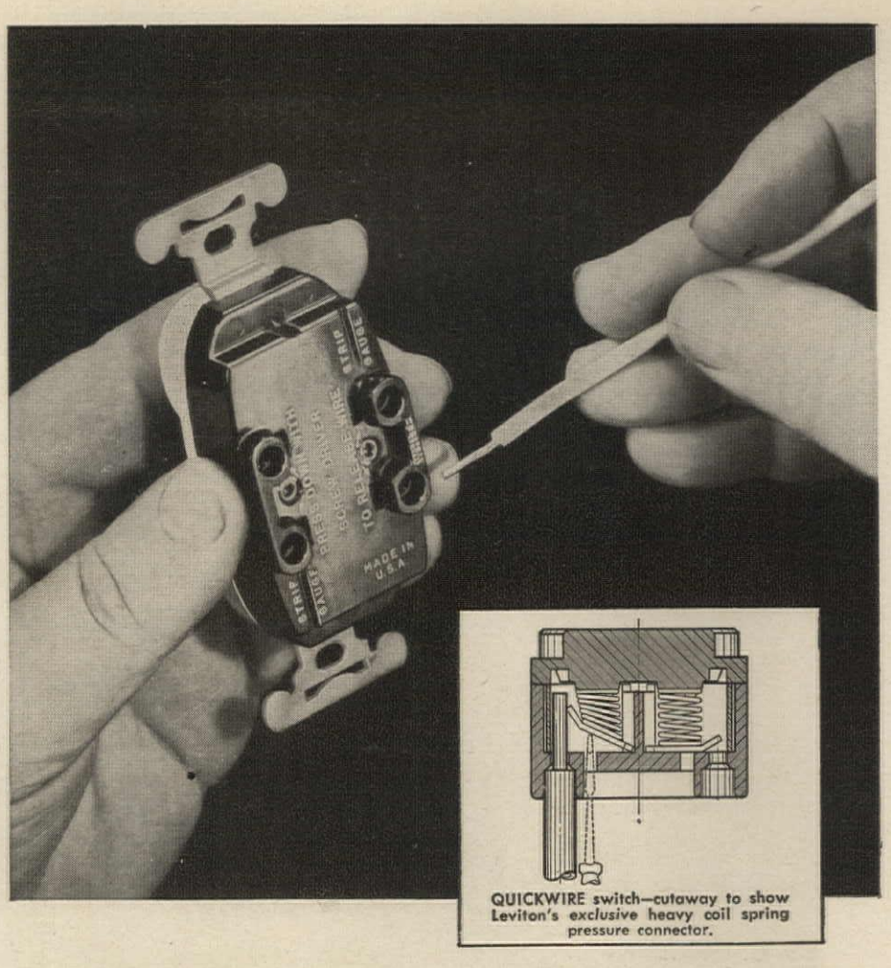

For bedrooms, sickrooms, nurseries, libraries, hotels, hospitals, and other places where "peace and quiet" are essential...the new Leviton QUIET SWITCH is just what is needed. A lifetime switch that is tops for quality, reasonable in price and modern in quiet action. Everyone will be switching to the new Leviton Quiet Switch . . . cash in on the big demand for electrical wiring modernization. Available in single pole, double pole and 3-way . . . in either brown or ivory phenolic. Rating 15 A. 120-277 V. AC only. Also available for heavy duty use. Rated 20 A 120-277V. AC only with red cover. Meets U.L. and C.S.A. specifications.

## Midget 2-Wire Lev-o-Lock Assures Dependable Connection



This latest addition to the Leviton Lev-o-Lock Line assures you safe, dependable connections under severest conditions of vibration, motion or accidental pull-out. Especially useful where space is important, these midget 2-wire devices lock securely with a turn of the cap. Caps and cord connectors are made of sturdy brown phenolic. Cap blade assemblies, made of heavy gauge brass, are accurately aligned for positive contact at all times. Connectors feature phosphor bronze double wiping contacts. Rating 10 A.-250 V.; 15 A.-125 V. Listed by U.L. and C.S.A. Other Lev-o-Lock devices are available in 2, 3 and 4 wire caps, connectors and receptacles in 10 and 20 Amp. ratings.

For complete information write Leviton Manufacturing Company, Inc., Brooklyn 22, N. Y.


QUICKWIRE switch—cutaway to show Leviton's exclusive heavy coil spring pressure connector.

# EASILY THE BEST!

**— Quick and easy installations are done best with**

**NEW LEVITON Quickwire**

**spring type, screwless terminal switches and receptacles.**

QUICK — because there are no wire loops to make, no screws to loosen and tighten. EASY — because you simply strip the wire and push it into hole. BEST — because Leviton's **exclusive** heavy coil spring connector holds the wire in place firmly, making permanent contact. To release, simply insert a screwdriver into the release hole.

You save time, money, labor costs when you use QUICKWIRE spring lock switches and receptacles. Simple, easy-to-read instructions are molded into the Bakelite on each device. Deeply recessed wire wells prevent exposure of bare wire. Fully enclosed housing, plaster ears, and handy strip gauge marking on each device.

QUICKWIRE receptacles are available in brown or ivory phenolic. Switches have either brown or ivory toggles and the same famous Leviton switch mechanism — known for service and dependability the world over. And both devices meet UL, CSA and Federal Specifications, of course.

*Your best jobs are done with...* **LEVITON**

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# 5 miles of *Gold Seal*® Floors exclusively for Maine State Office

ARCHITECTS: Miller & Beal, Inc., Portland, Maine; ASSOCIATE ARCHITECTS: Desmond & Lord, Boston, Mass. FLOORING CONTRACTOR: Portland Veos Tile and Flooring Co., Inc., Portland, Maine.



Aerial view of the new Maine State Office Building with the Capitol building at the rear.

# specified Building!





Here's an interior view showing a small part of the installation of Gold Seal Inlaid Linoleum. Actually, about 3½ acres of floor space are covered with this ⅛" burlap-backed "Veltone."

MORE than 148,000 square feet of Gold Seal Veltone® ⅛" Inlaid Linoleum has been specified and installed in the new Maine State Office Building at Augusta, Maine.

Originated by Gold Seal, "Veltone" provides an attractive, long-wearing, all-over decoration for use in all public buildings, schools, hospitals, offices, etc. Veltone's excellent resiliency provides quiet and comfort under foot. The unique design of this Inlaid Linoleum literally hides foot marks . . . it's exceptionally easy to clean and keep clean because of its density and surface smoothness. This ease of maintenance naturally reduces the expense of building service and upkeep. For those who prefer the modern textured look in Inlaid Linoleum, Gold Seal offers Sequin®—⅛" thick—with all the advantages of "Veltone."

Gold Seal Vinylbest* Tile and Gold Seal Asphalt Tile were also used in special areas such as the food and photo laboratories.

**Specifications—Gold Seal Veltone:** 6′ wide yard goods, ⅛" gauge, burlap-backed. Install over suspended wood, or suspended concrete under-floors. Available in 8 colors—Pompeian Grey, Heather Tan, Spicewood, Bermuda Grey, Light Tan, Grey, Brown, Surf Green. Also made in standard gauge for residential use—in 9 colors.

**Send for Free Technical Data Book**—"Why Resilient Floors"—containing 36 pages of information to help you specify the correct resilient floor for any type of commercial, institutional or residential building. Address Architects' Service Department, Gold Seal Floors and Walls, Congoleum-Nairn Inc., Kearny, N. J.

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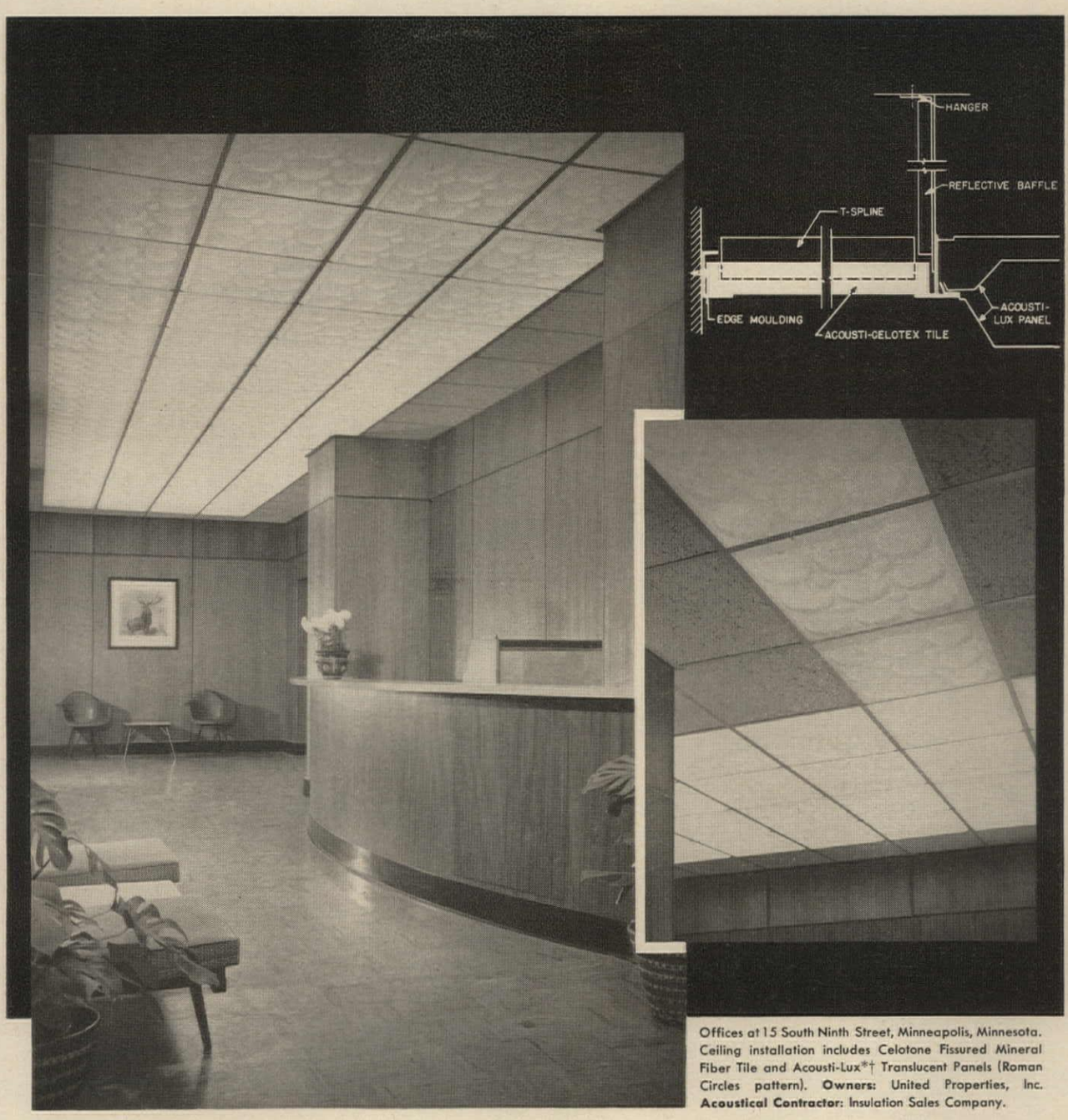



American Hardware Mutual Insurance Company, Minneapolis, Minnesota, showing Acousti-Celotex Celotone* Fissured Mineral Fiber Tile installed with lighting and air conditioning components. **Architects:** Thorshov & Cerny, Inc. **Acoustical Contractor:** Insulation Sales Company.

# Planned to be Beautiful

## —INTEGRATED LIGHT AND SOUND CONDITIONING!

**Efficiency, Attractiveness Combined through Coordinated Talents of Architects, Owners, Contractors, and Manufacturers**




Offices at 15 South Ninth Street, Minneapolis, Minnesota. Ceiling installation includes Celotone Fissured Mineral Fiber Tile and Acousti-Lux*† Translucent Panels (Roman Circles pattern). **Owners:** United Properties, Inc. **Acoustical Contractor:** Insulation Sales Company.

Shown here are outstanding examples of completely integrated ceiling systems in offices. Close coordination of architects with skilled contractors in related fields results in ceilings designed to be an active, working part of a modern building. Such ceilings, as those illustrated, provide balanced environments of light-, air-, and sound-conditioning . . . and are unusually attractive as well. Today, Acousti-Celotex Distributors are being consulted more and more in the *early planning stages* of buildings . . . because of their specialized knowledge of ceiling potentials. They stand ready to cooperate with you in all of *your* specific projects.

**FOR COMPLETE DETAILS** on Acousti-Celotex Sound Conditioning Tile, Acousti-Lux Translucent Panels, and their many installation system possibilities, write to The Celotex Corporation, Dept. A-37, 120 S. La Salle St., Chicago 3, Illinois.

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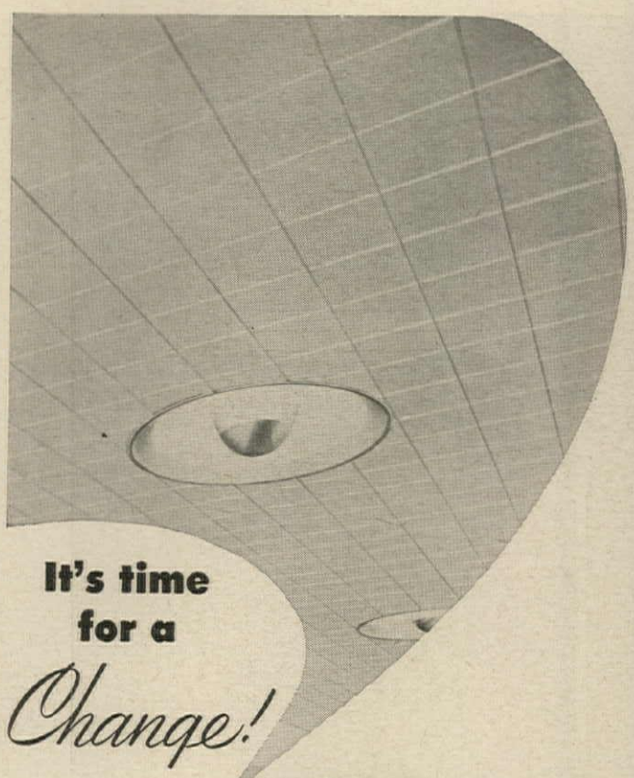
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Why continue to use 'substitute' heating and cooling methods when nature's own method of direct radiation is now available in a form that meets all practical demands for structural installation, mechanical operation and control?

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Versatile new MAGNA-TILE, used for both inside and outside walls, creates a dramatic setting for this distinctive store design . . . a setting as functional as it is attractive. Here, the surprisingly soft, feminine effect of the wall expanse coordinated with Stylon unglazed porcelain floor tile in harmonizing colors . . . shows the almost unlimited design possibilities afforded by MAGNA-TILE.

MAGNA-TILE is *frostproof*, can be used in any climate. The large rectangular panels offer lower installation costs per square foot of coverage, wider scope for imaginative design. Fewer joints mean less grouting, greater sanitation. 15 magnificent solid and decorative colors provide plenty of choice for exterior, interior, residential and commercial application.

Stylon MAGNA-TILE is made by applying an impervious matt surface glaze to an extremely tough body, compounded of refined ceramic materials and fused at high kiln temperatures. It is acid-resistant, extremely durable and will withstand sharp temperature variations.

*Suggested applications for MAGNA-TILE include:*

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## *A thought for architects*

The message on new beauty for the Houston sky line, below, appears in the March issue of *Fortune* magazine. It is addressed to the business leaders with whom you are most likely to be doing business. Its objective is to seat the thought that exciting as well as practical buildings are being constructed of aluminum.

*And now that thought . . .*

So much is going on at Alcoa® in research, new fabrication methods and exciting new ways to use aluminum in architecture, it is impossible for busy architects to keep informed in the usual way.

Each Alcoa sales office has the services of an informed specialist in architectural applications of aluminum. Why not invite this man to give you periodic briefings on current happenings. And he's always available for consultation on specific problems.

Meanwhile, we have a new book for you called, *Wall Systems of Alcoa Aluminum*. It's a 12-pager in full color and will quickly bring you up to date on aluminum wall systems. Write for it. Aluminum Company of America, 1887-C Alcoa Building, Pittsburgh 19, Pennsylvania.

# New Beauty for the Houston Sky Line

This impressive building, of gray Alcoa® Aluminum, is the new home of the Bank of the Southwest. Blending into the blue Texas sky, enriched by vertical pin-stripes of maroon porcelain enameled aluminum, this gracious 24-story building dominates today's Houston sky line.

Its aluminum skin is composed of one-story panels, complete with vertically pivoted windows that were lowered into slotted tracks in the two-story mullion sections previously bolted to framework. Each of the 1,260 panels replaced 8 tons of conventional material . . . an aggregate saving of 10,080 tons.

These other advantages of aluminum construction were also realized . . . less steel work, lower



cost foundations, about seven per cent more usable floor space, freedom from costly exterior maintenance. And, of course, the prestige of owning and occupying so notable a building.

Through close association with architects and aluminum fabricators on hundreds of aluminum buildings, Alcoa's architectural staff has amassed an imposing amount of practical knowledge invaluable to those considering buildings with aluminum curtain walls. Our advice and services are available to all, through any of our sales offices. Your telephone directory lists the one nearest you.

ALUMINUM COMPANY OF AMERICA, 1887-C Alcoa Building, Pittsburgh 19, Pennsylvania.

Architect: Kenneth Franzheim, A.I.A., Houston, Texas
General Contractor: W. S. Bellows Construction Co., Houston, Texas
Aluminum Fabricator: General Bronze Corporation, Garden City, Long Island, New York

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*You can satisfy your clients' expensive tastes with economical metal buildings...*

**design around mass-produced Butler components and create distinctive, custom-styled buildings**

The building pictured below was designed on a basic Butler metal building. Inside and out it permitted unlimited architectural treatment.

The weight of the building is carried by the rigid steel frame. The exterior curtain walls are non-load-bearing and are designed for beauty instead of strength.

The clear-span construction provides spacious, post-free interiors fully adaptable to good internal layout.

This building is not only modern and functional, but has the additional advantages of great strength, fast erection, and modest cost.

Today, many architects have designed churches, schools, factories, offices, warehouses, and commercial buildings around basic Butler buildings. They satisfied their clients' taste for true quality, yet they held down costs.

Be sure to get the details of the Butler Building System from your Butler Builder. His name is listed under "Buildings" or "Steel Buildings" in the Yellow Pages of your telephone directory. Ask him to show you the sound film, "Architectural Opportunities from the Butler Building System". . . or write direct.



The overhanging roofs in combination with the walls of brick, glass and wood create a modern, distinctive church.



A section of the post-free interior shows how it provides unlimited opportunity for good internal layout.

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# Office Building



THE NEW ENGLAND LIFE BUILDING, Boston, Massachusetts. Architects: Cram & Ferguson; Engineers: Buerkel & Company. ELECTRO-MATIC filters supply 200,000 cfm of super-clean air on nine air conditioning systems.

# Saves $16,000 a Year

## with *Electro*-MATIC filters!

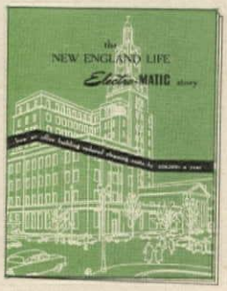
### New England Life Building gets SUPER-CLEAN Air at a saving

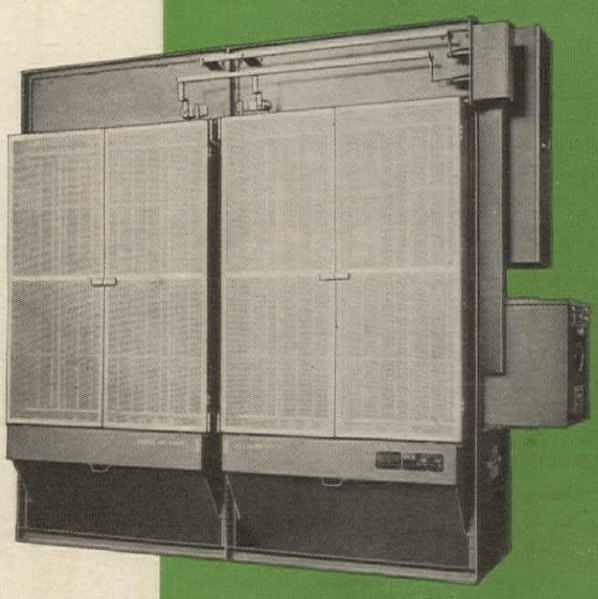
IN 1941, when the New England Life Insurance Company moved into its beautiful new building, *mechanical* filters were installed to supply 200,000 cfm of clean air for nine air conditioning systems.

Six years later, these filters were replaced with AAF ELECTRO-MATICS. Results: *super-clean* air allowed a *20% reduction* in the cleaning staff. The ELECTRO-MATICS have long since paid for themselves and are now saving the Company $16,000 *every year* they are in operation!

And maintenance is remarkably simple. One man spends *less than 8 hours a week* maintaining filters on all nine systems. That's because ELECTRO-MATIC has its own built-in "maintenance crew"—cleans *itself* continually, *while it's cleaning the air!*

Super-clean air at a saving—that's "the New England Life ELECTRO-MATIC Story" in a nutshell. *Now*—get the *whole* story. Write for free 12-page booklet that provides complete data on ELECTRO-MATIC's money-saving performance.



THE MODEL F ELECTRO-MATIC eliminates the most minute dust particles—even smoke! No time out for washing down with water, no need for extra sewer or water connections. Not even *buttons to push!* ELECTRO-MATIC maintains its efficiency through continuous self-cleaning.

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Herman Nelson Unit Ventilators



*One of several Prudential lobbies made even more attractive with latex paint.*



## LATEX PAINTS USED IN PRUDENTIAL BUILDING

The 21-story building of the Prudential Insurance Company, Houston, Texas, has latex paint on many interior surfaces—executive offices, working divisions and lobbies.

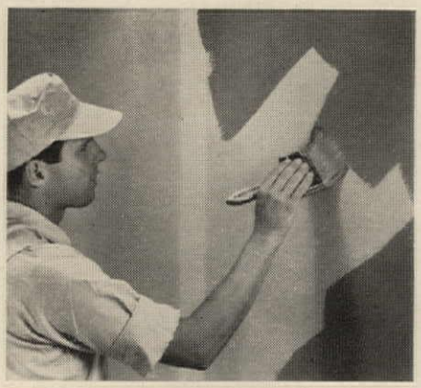
This handsome paint is made with styrene-butadiene latex to assure an elastic coating for uniform surface, lasting beauty and resistance to repeated washings. Prudential's Southwestern Home Office is an example. Easy application, fast dry and lack of painty odor are among the other features that make latex paint popular with architects. There's a wide range of colors to provide the effect you wish —easily, economically, positively!

These are examples of how you benefit from our persistent research to provide paints with tomorrow's benefits today.

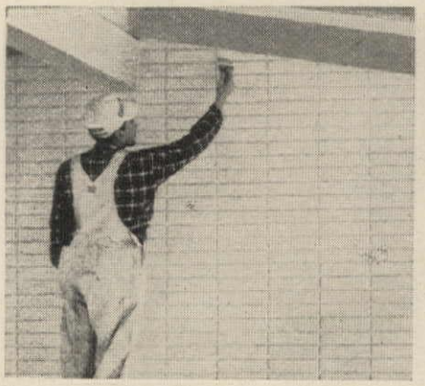
## 8 ways you can use LATEX PAINTS



**1 PLASTER** . . . Alkali-resistant latex paints can be safely applied over freshly dried plaster. If overgauging occurs in the plaster, latex paints still dry with uniform appearance and beauty.



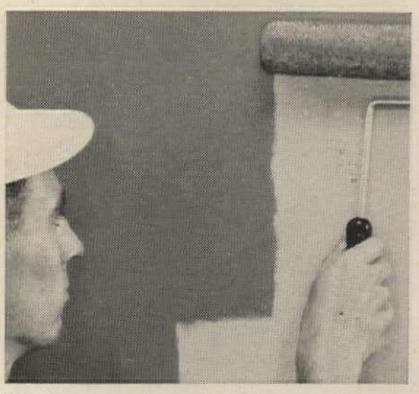
**2 DRY WALL CONSTRUCTION** . . . Latex paints give excellent results. On new construction, two coats of a latex paint are usually required. As on any surface, latex paints leave a durable, washable surface.



**3 INTERIOR BLOCK** . . . Latex paints have excellent sealing properties over cinder block, concrete block and other porous surfaces. Usually two coats are required to give the desired covering.



**4 EXTERIOR MASONRY** . . . Latex paints offer maximum durability under weathering . . . resist sun, fog, mildew . . . seal out dirt, moisture. Alkali resistant. Two coats are usual for stucco and masonry.



**5 FIBERBOARD** . . . Latex paints provide an effective seal coat for long, satisfactory service on wallboard. Several coats of a latex paint are sometimes used to establish a moisture-vapor barrier.



**6 GYPSUM BOARD** . . . Latex paints are particularly good for this application. They do not strike in and photograph through plaster patching or over nail holes and seams.



**7 WALLPAPER** . . . Latex paints cover wallpaper readily. Seal the porous paper surface. Hold out dirt, stains and moisture. Assure smooth, uniform finish.



**8 PRIMED WOOD AND METAL TRIM** . . . Because latex paints contain water, it is best to prime wood and metal with an oil primer to prevent contact with bare surfaces.

For additional information, see your paint supplier. Dow does not make a latex paint but is a leading supplier of latex to progressive paint manufacturers.

For a list of leading latex paint manufacturers, write: THE DOW CHEMICAL COMPANY, Midland, Michigan—Plastics Sales Department PL1834R.

LATEX T.M.

YOU CAN DEPEND ON DOW

# this one was really tough!

## crafted by Overly

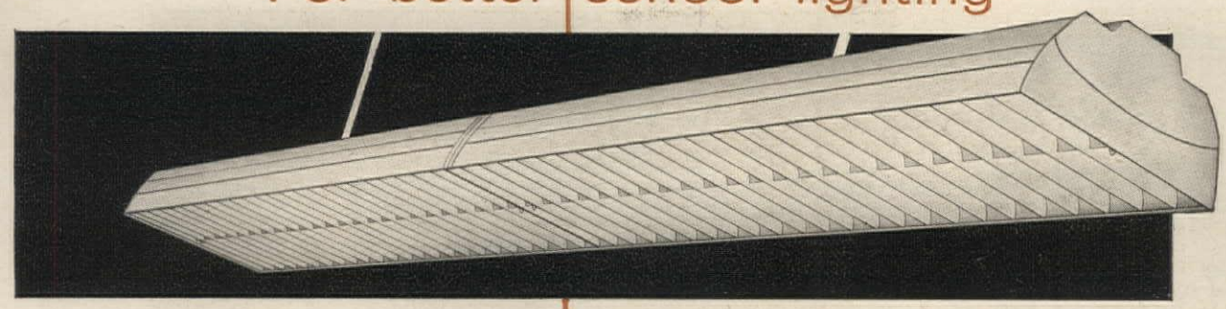


Architects: Lam Woo; Howard D. Smith; Harry F. Reichard, Columbus, Ohio

With the completion of this mammoth field house group, seating 15,000 in the Arena and 3,000 in the Indoor Practice Building, Ohio State University's indoor sports facilities rate with finest in nation. • 1,273 squares of Overly Type B aluminum batten roofing were applied over a metal deck insulated with 2" of rigid insulation sandwiched between two layers of 30 lb. felt. Roof assembly has a U factor of .151. • Arena roof presented extremely difficult mechanical and layout problems; four barrel-shaped roofs meet at a center point, with a 22' wide valley between, forming a groin vault construction. Everything had to be pattern cut. No true curves could be used, since each barrel slopes to a low point at front of each arch. • This is Overly's fifth field house roofing project—including three State Universities—testimony enough to the performance of Overly's economical, permanently weatherproof, guaranteed roofing systems. • Write today for our new catalog 8b-Ov with "streamlined specifications."

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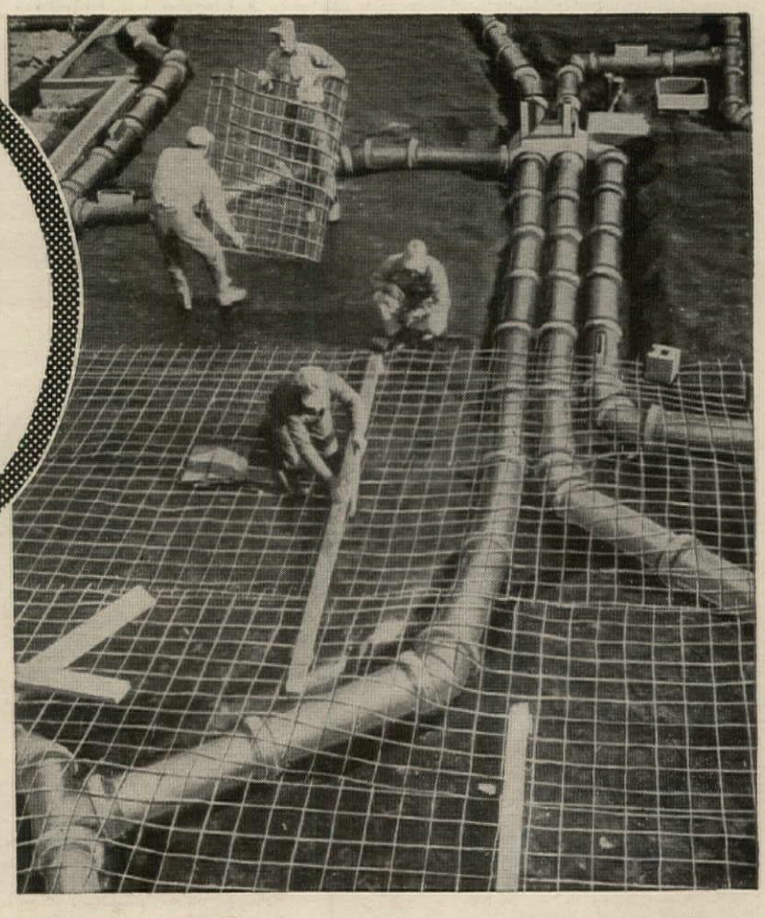
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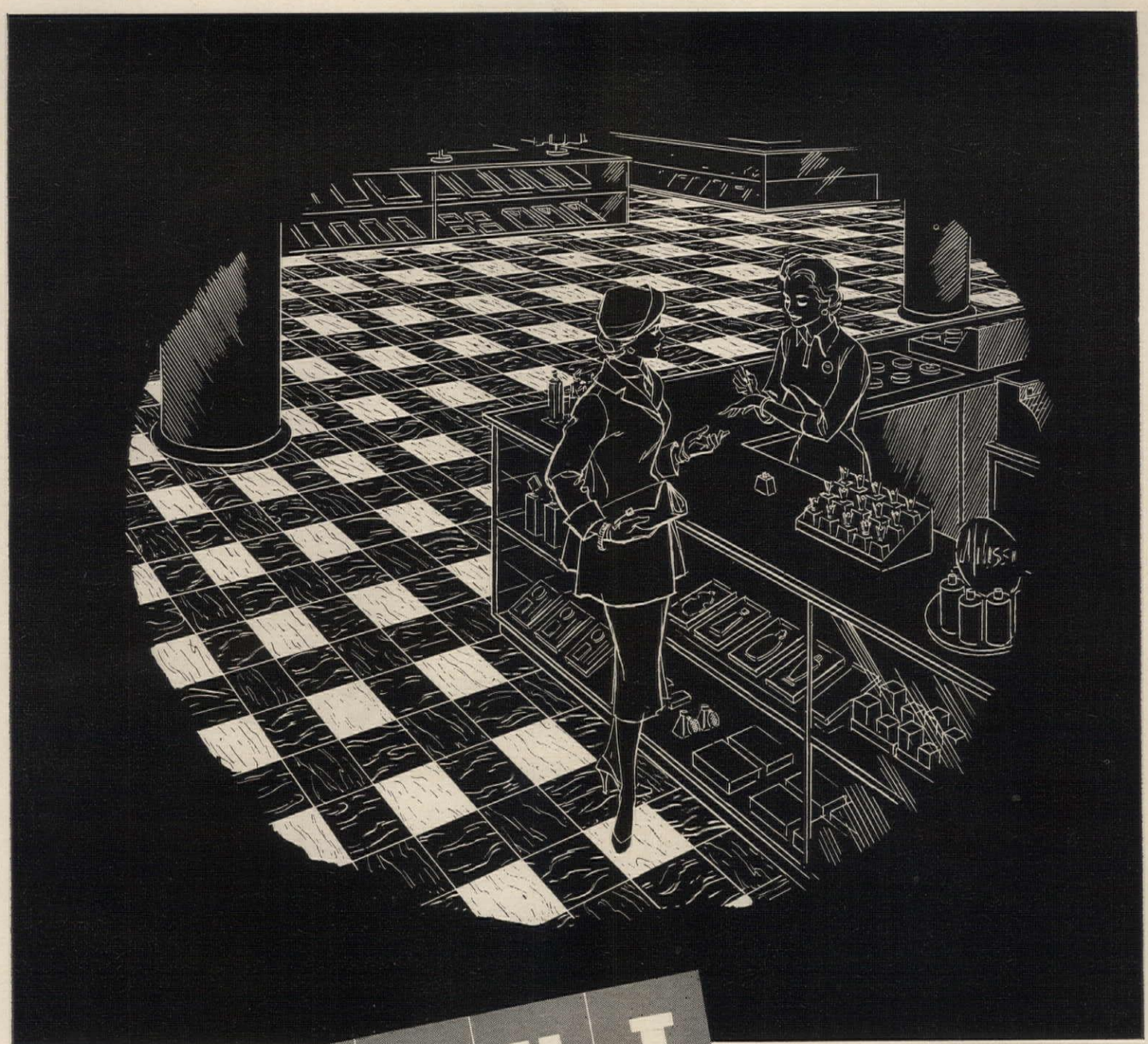
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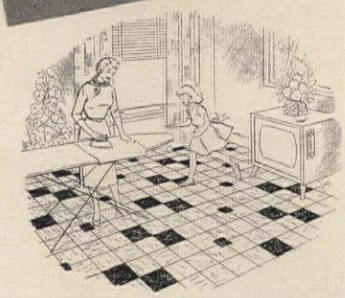
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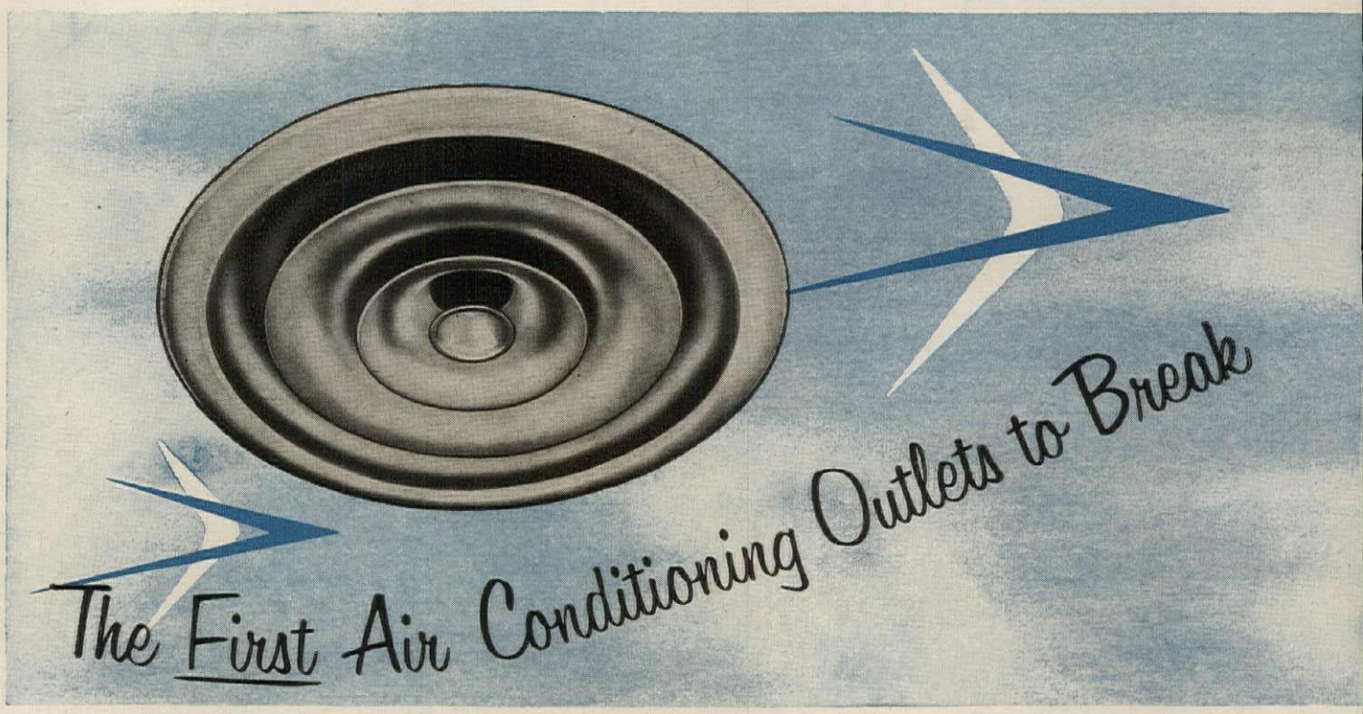
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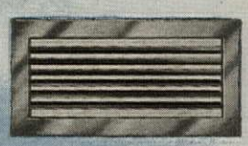
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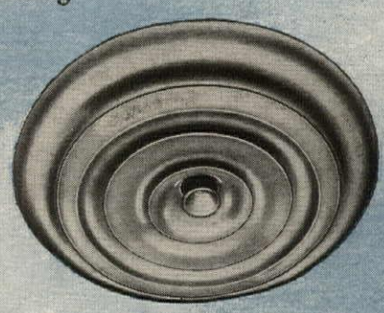


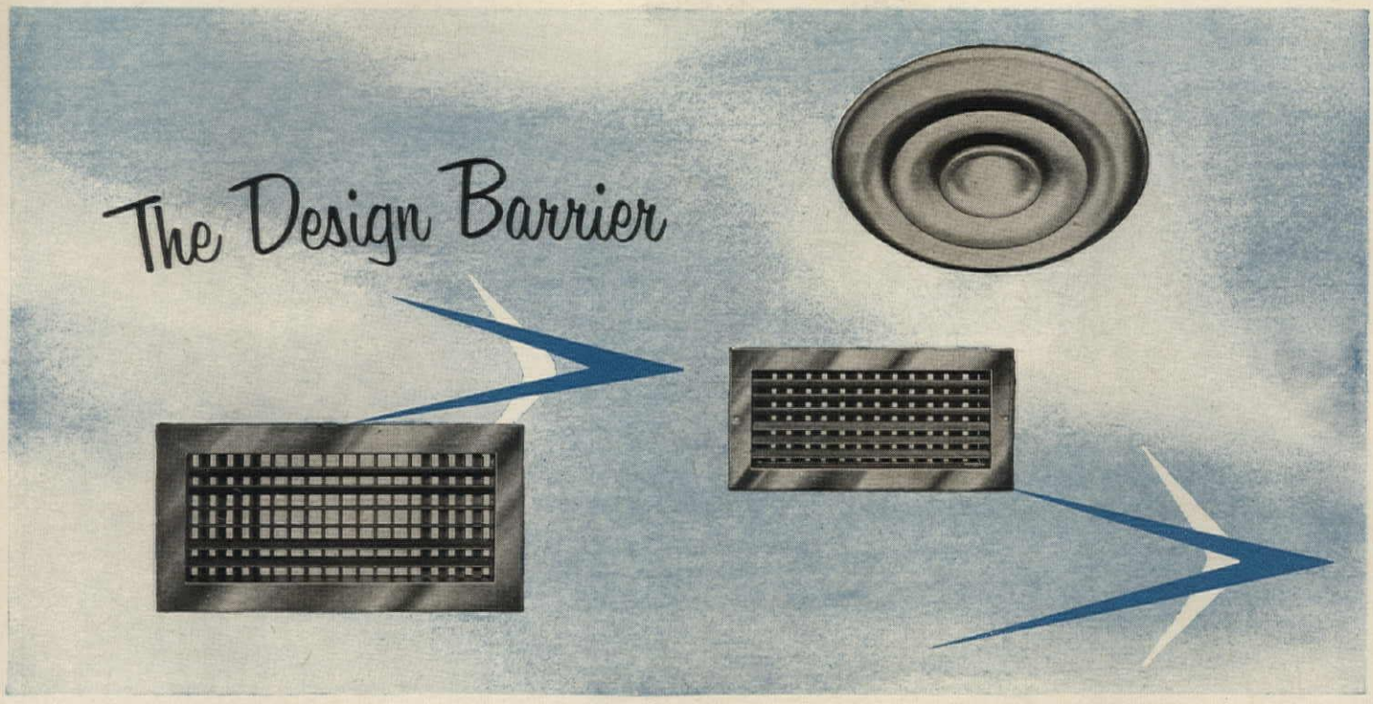
Here is a dream come true . . . a line of air conditioning outlets by TITUS with beautiful, graceful lines that give unrestricted freedom of design—that fit the new design trend.

Here are outlets that enhance the architect's studied motif . . . outlets with charm, PLUS the ability to *pinpoint* the air stream to a specific area . . . or *diffuse* it . . . or *deflect* it . . . or *turn* it . . . or *blanket* a part of a room.

Here are outlets by TITUS with such a wide variety of uses that they *accent* the overall design, whether placed in the wall, in the ceiling, or in the baseboard.

Specify TITUS air conditioning outlets and *know* that you can create the air patterns so vital to efficient heating or cooling . . . and still preserve the architectural beauty.






# Registers & Ceiling Diffusers

designed by TITUS




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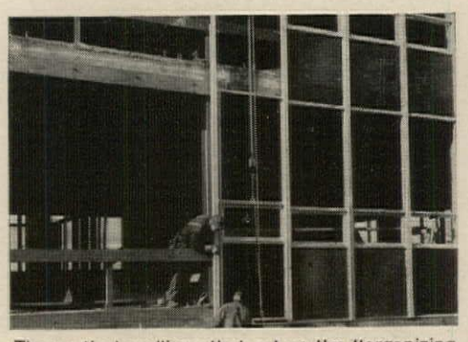
All-Season Installation: Experienced Lupton crew gets fast start even in freezing cold. Building is enclosed faster; interior finishing starts sooner.



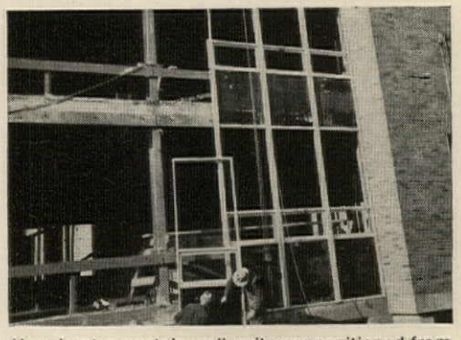
Lupton crewmen accurately align and attach continuous aluminum sill at base of wall. Clips for anchoring mullions are factory pre-set and welded.



Lupton crewman bolts mullion to structural frame with heavy galvanized steel clips. Slotted holes permit accurate alignment.



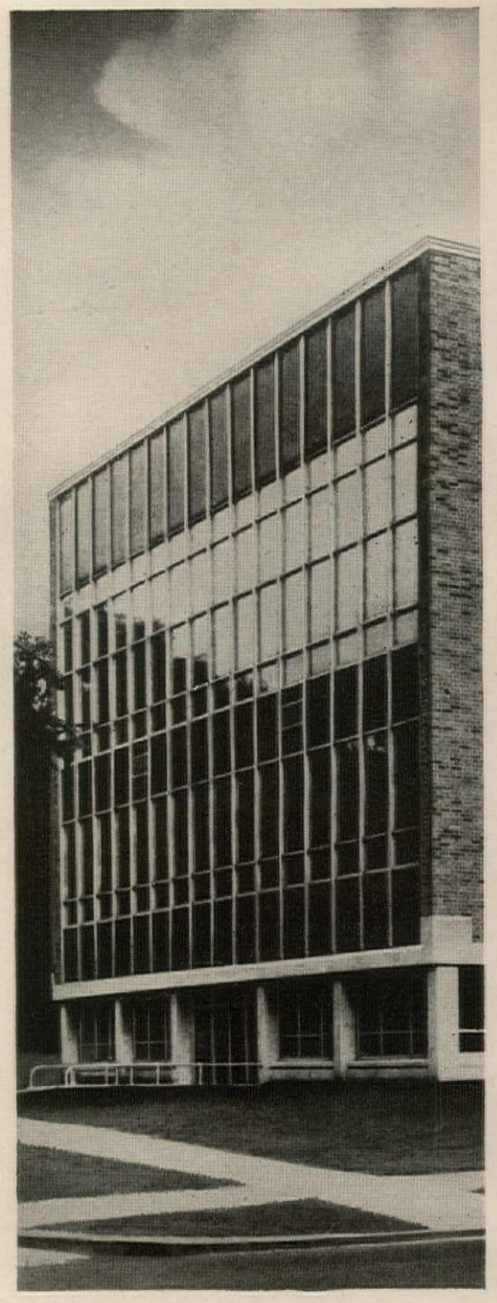
The vertical mullions that act as the "organizing element" of the wall are positioned with extreme accuracy, regardless of structural irregularities.



Here Lupton curtain wall units are positioned from outside building—convenient handling procedure for two- and three-story buildings.



Niagara County Building nears completion. Time and money saved in construction draw compound interest in minimum maintenance costs.



## Aluminum Curtain Wall System:

# LIGHTWEIGHT LUPTON ALUMINUM WALLS

**Architect-Designed:** *You* design Lupton Curtain Walls to meet the needs of *your* installation. Lupton carries out your specifications by seeing the job through until the final panel is in place. You get unusual design freedom—in size and location of glazed and non-glazed areas . . . type of fenestration . . . material, color and texture of opaque areas—with the Lupton Curtain Wall System.

**A Complete System:** Lupton Aluminum Curtain Walls are manufactured, shipped and installed *as specified* under a single contract by one responsible organization. You get complete moisture protection, efficient insulation, balanced sandwich construction to prevent distortion due to changes in temperature, on-the-spot adjustments to compensate for irregularities in the building frame.

**Important Installation Economies:** The Lupton Curtain Wall System makes possible considerable savings in time and money. Maximum prefabrication of large size wall units means minimum waste motion on the site. Curtain wall fabrication can be started as soon as the design has been established. Installation can begin even before the building frame



NIAGARA COUNTY BUILDING, NIAGARA FALLS, N.Y. Arch.: Charles F. Obenhack. Contr.: Walter S. Johnson Building Co. Lupton Curtain-Wall System, Type G. Width module, 4'-0". Double glazing, 1" thick fixed lights, ½" thick in ventilators. Ventilators open in. Opaque areas are double panel construction. Outside face is green-black porcelain enamel laminated with honeycomb core, galvanized back. Inside face is galvanized steel sheet covering 1" thick insulation. Back-up wall to sill height.

# SIMPLIFY DESIGN, SPEED CONSTRUCTION

is finished. Wall components are light in weight, handle easily, go up in record time; greatly reduce dead load supported by structural frame. And Lupton Curtain Walls provide minimum-cost maintenance for the life of the building.

Get Lupton into your curtain wall design picture *early*. You'll find complete specifications listed in Sweet's Architectural File 3a/FLy. To locate the representative nearest you, look for the name LUPTON in the Yellow Pages under *Windows—Metal*. Or, for data sheets and Lupton help in your planning, write or wire direct.

# LUPTON

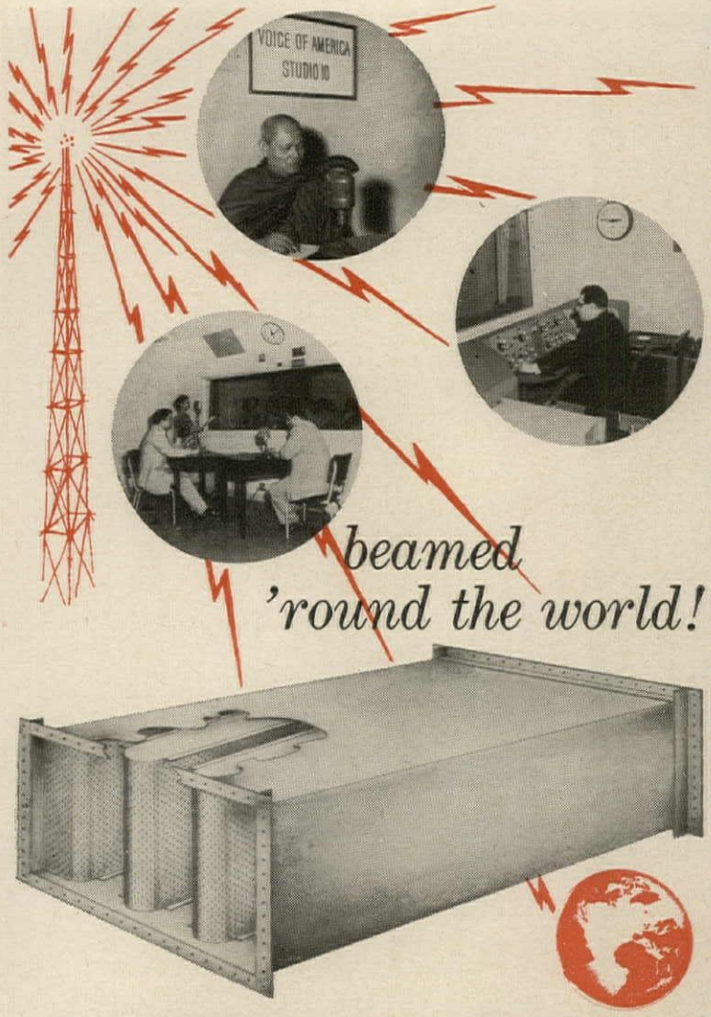
**ALUMINUM CURTAIN WALLS AND METAL WINDOWS**

•

**MICHAEL FLYNN MANUFACTURING COMPANY**

*Main Office and Plant*

700 E. Godfrey Avenue, Philadelphia 24, Penna.




*beamed 'round the world!*

***The Low Noise Levels Necessary for World-Wide Broadcasting at the Voice of America are provided by***

IAC Quiet Duct

## PACKAGED STANDARDIZED SILENCING

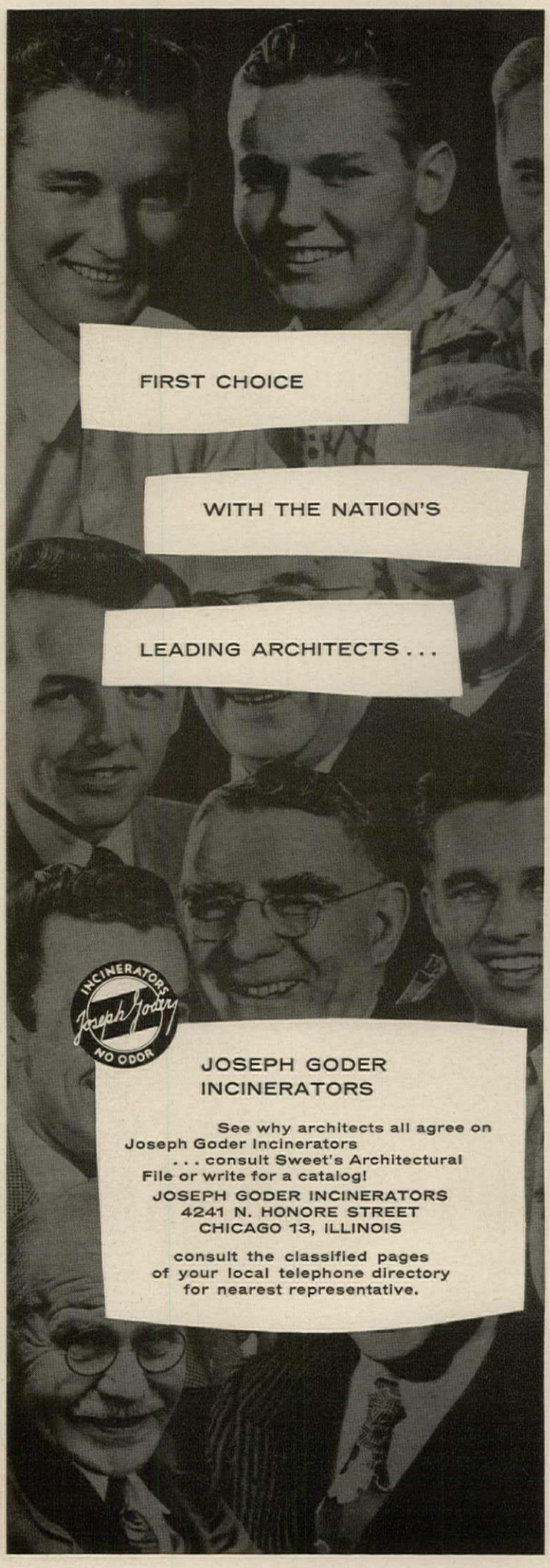
Yes, the new IAC Quiet-DUCTS eliminate noise from air conditioning and ventilating systems to meet every performance requirement! Prefabricated in as many as 148 sizes, these economical "Quiet-DUCT" units which measure in length from 2 to 10 feet provide as much noise control as a conventional lined duct measuring from 30 to 100 feet long!

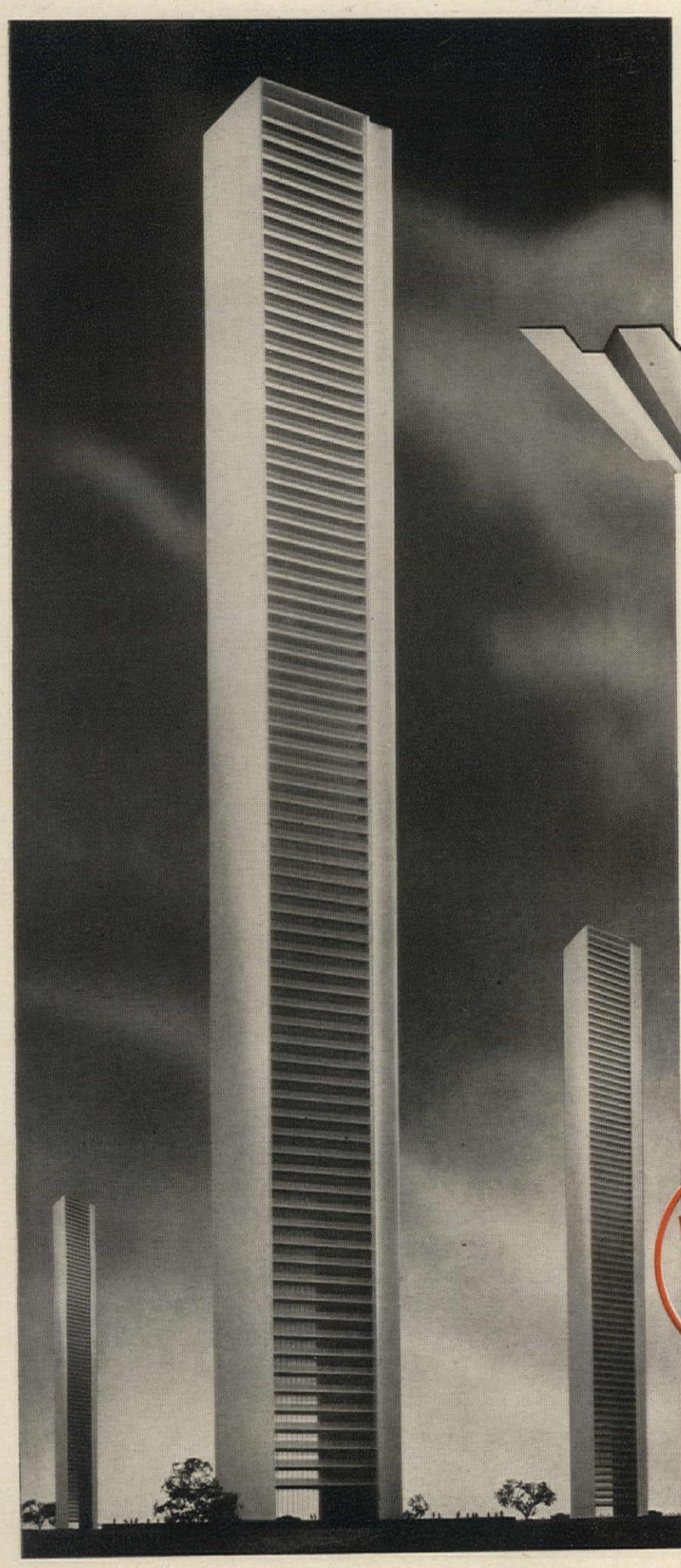
***COMPLETE DATA AVAILABLE!*** Write today for a complete set of data sheets and catalog describing prefabricated "Quiet-DUCT" units.

**INDUSTRIAL ACOUSTICS COMPANY, INC.**

*Specialists in Noise & Pulsation Control*

**341 Jackson Avenue, New York 54, N. Y. • Tel: CYpress 2-0180**





DAMORA

This corrugated floor of reinforced concrete, no thicker than a concrete sidewalk, combines strength and light weight, is supported only by the outer walls and thus achieves columnless, long, clear spans. Open spaces in corrugated folds serve as natural channels for wiring, heating, air conditioning, and other supply lines. This floor system permits building to far greater heights than present-day reinforced-concrete structures.



# TOMORROW'S SKYSCRAPER:

## new spaciousness and height with concrete

"Today's city planning seeks to make more use of air space to create less crowded ground space. Tall buildings of reinforced concrete can help provide airy spaciousness—inside as well as out. The buildings you see require no interior columns, resulting in new spaciousness and flexibility. Such multi-story buildings of reinforced concrete can be built with economy and speed, are completely fireproof and adaptable for many uses—another example of how concrete meets the needs of civic planning and building."

BOYD ANDERSON, AMMANN & WHITNEY,
*Consulting Engineers.*

One of a series of advertisements being presented in national magazines by Universal Atlas—to promote interest in architectural contributions for a greater America through the medium of concrete. For more about this building method, write to Universal Atlas, 100 Park Avenue, New York 17, N. Y.

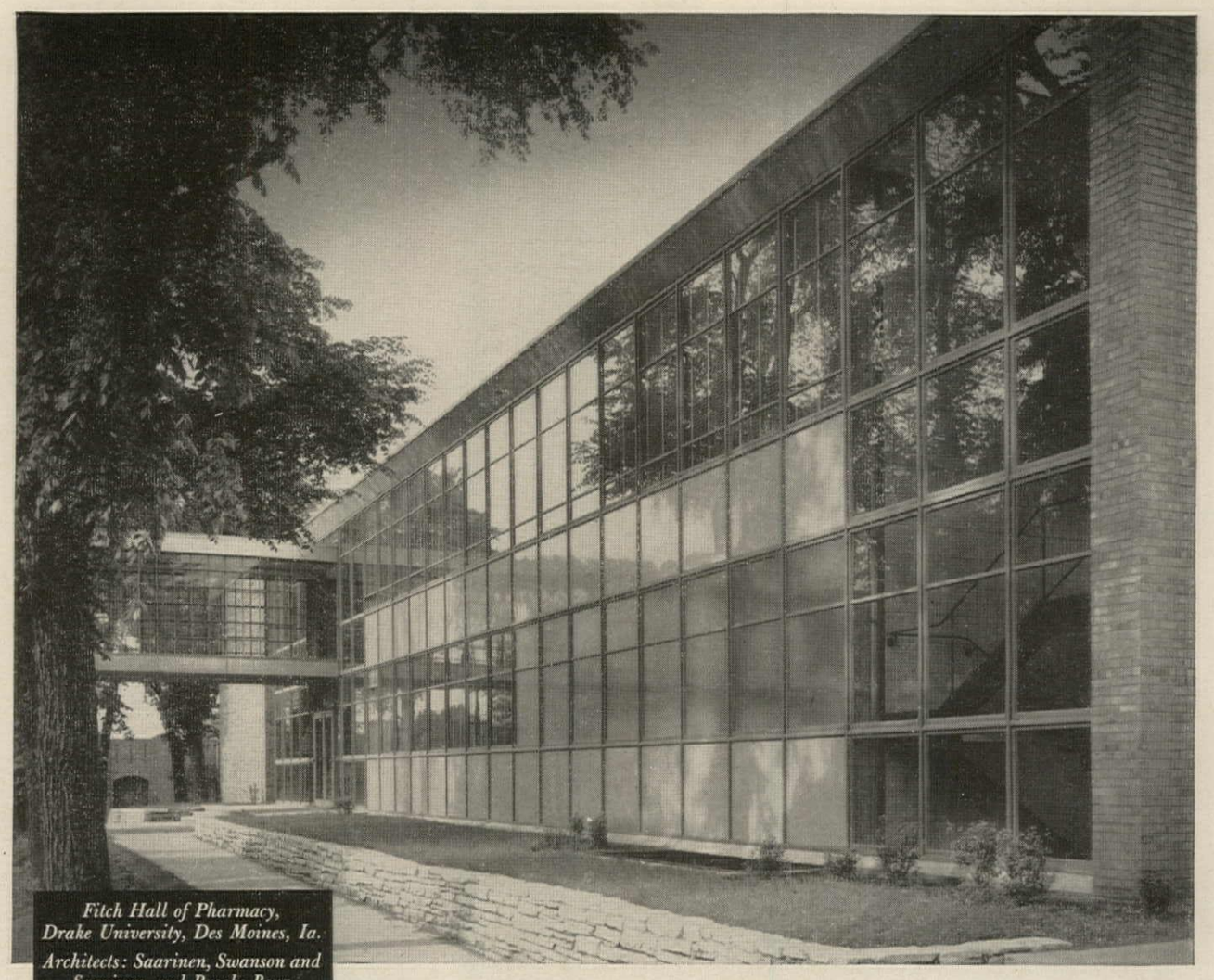
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member of the industrial family that serves the nation—
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*Fitch Hall of Pharmacy, Drake University, Des Moines, Ia.*
*Architects: Saarinen, Swanson and Saarinen, and Brooks-Borg.*
*Contractors: Arthur H. Newmann & Bros., Inc.*

# HOPE'S WINDOW WALLS KEEP THEIR PROMISE...

More than ten years have passed since the architects designed this building . . . one of the earliest "Window Wall" installations in the United States. At the time, when Hope's Window Wall construction was adopted, we pointed out the labor-saving advantages of its installation and confidently predicted that upkeep expense would be low. That has proven to be the case. The total Window Wall area in the building group is more than four times that illustrated in the photograph; the location is in a severe climate; yet the maintenance is less troublesome and expensive than for comparable, conventional masonry and window construction.

The great increase in the use of Window Wall construction by architects is sufficient evidence that it offers economies in original building cost and that its esthetic effects and benefits to building interiors are pleasing to owners.

Hope's engineering and planning assistance can be of great help to you and is always available when you have in mind a building with an interesting window problem. *Write for Catalog 152 AF for your files.*

**HOPE'S WINDOWS, INC., *Jamestown, N. Y.***

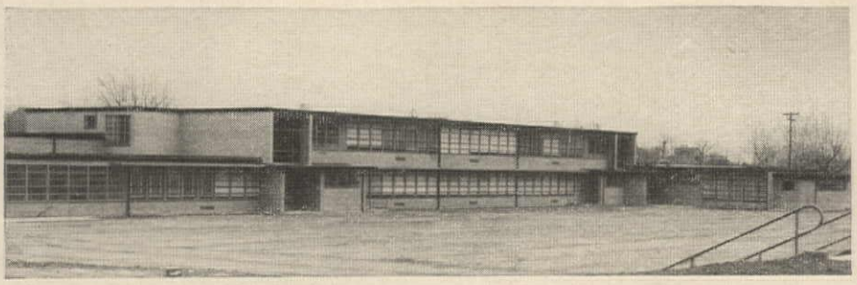
THE FINEST BUILDINGS THROUGHOUT THE WORLD ARE FITTED WITH HOPE'S WINDOWS

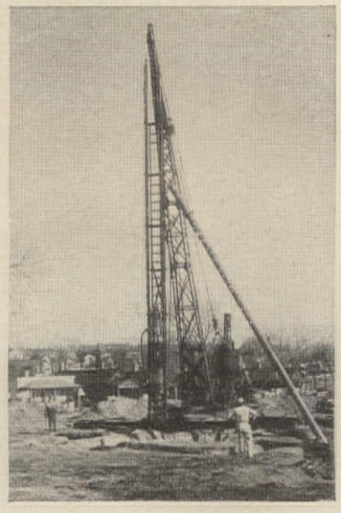
# Two Foundation Problems... Two Solutions with different Armco Foundation Pipe

**Typical Jobs Show How You Can Meet Wide Variety of Foundation Requirements With Armco Foundation Pipe**

**Case I:** Uniform Strata. Pile Lengths Known in Advance

Uniform driving conditions helped simplify the foundation job for this Kansas City, Kansas, school. 97 Armco Pipe Piles were driven to consistent depths of from 42 to 45 feet. Armco supplied exact 45-foot lengths. There was no waste. And the job was speeded because no splicing was required.





**Case II:** Irregular Strata. 40-foot Difference in Pile Lengths

Sloping strata complicated the foundation problem for the new state office building in Tallahassee, Florida. In many cases, Armco Pile Shells driven for the same pier encountered different strata. Lengths varied from 36′ to 75′. The deeper piles were a composite, made up of a lower portion of Armco Pipe Piles and topped with light-weight, helically corrugated Armco Pile Shells. This example shows how contractors are able to meet specific needs, no matter how widely varied, with the *right* Armco Foundation Pipe.





You can solve your foundation problems with the help of Armco Foundation Pipe. Write us for dimensions and physical data. Armco Drainage & Metal Products, Inc., 3797 Curtis Street, Middletown, Ohio. Subsidiary of Armco Steel Corporation. In Canada: write Guelph, Ontario. Export: The Armco International Corporation.

**Armco Foundation Pipe**

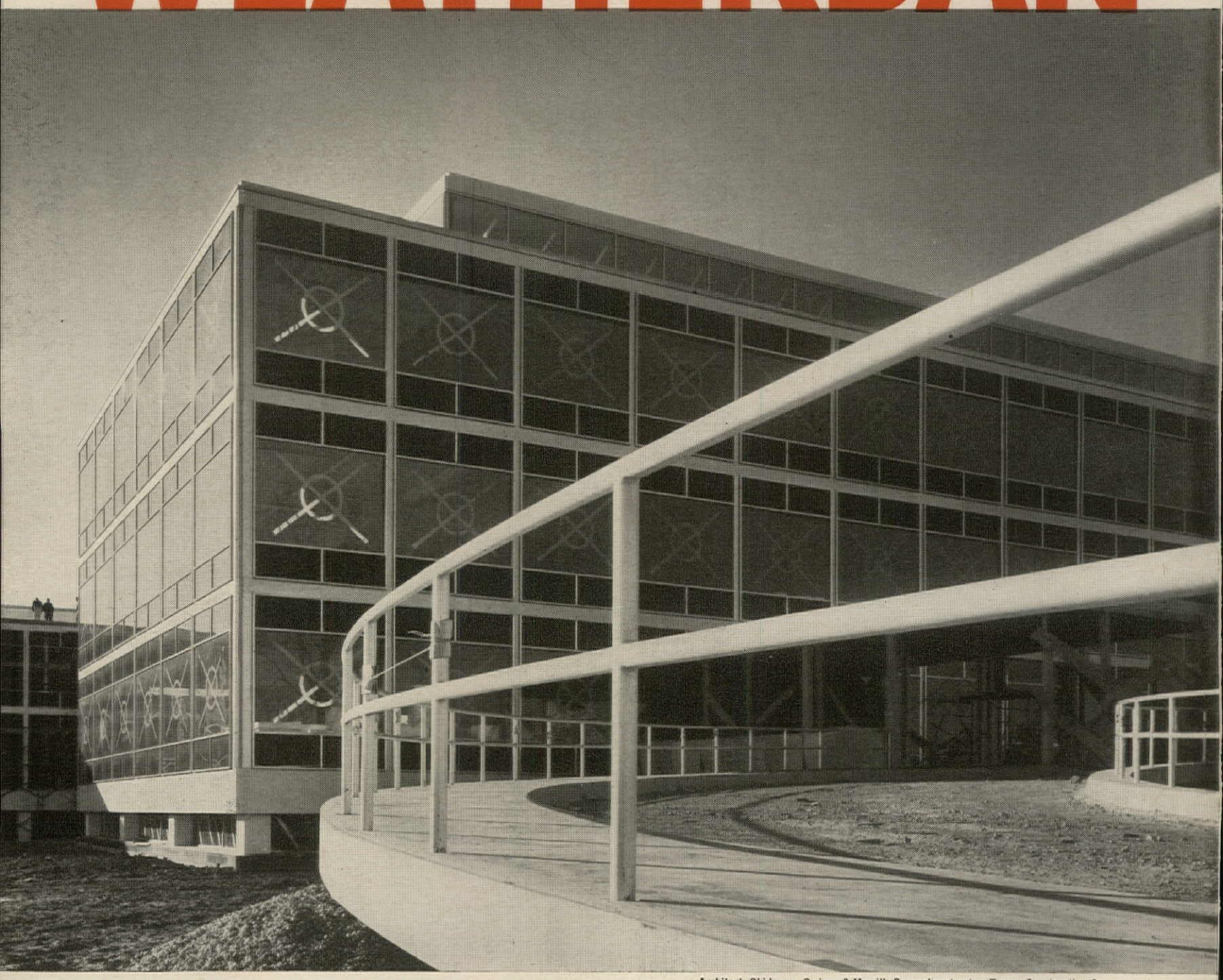
ARMCO®

# LOCKS WEATHER OUT OF 600,000-SQ.-FT. CURTAIN WALL BUILDING

*Announcing* ***new***

# WEATHERBAN

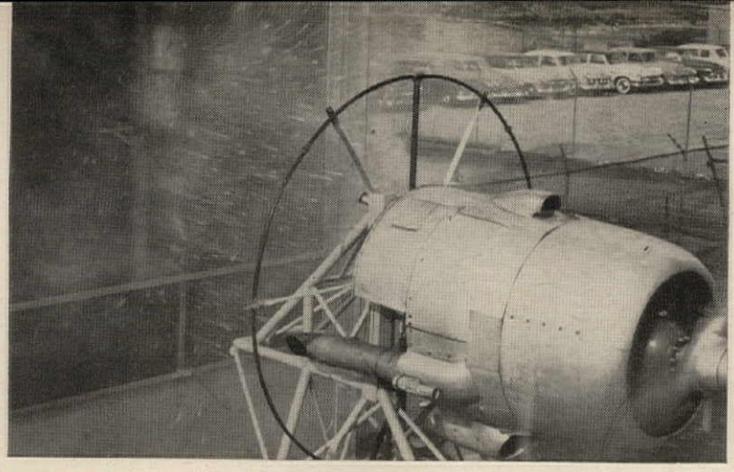
**BRAND CURTAIN WALL SEALER**



Architect: Skidmore, Owings & Merrill. General contractor: Turner Construction Co.

**CHOSEN FOR CONNECTICUT GENERAL LIFE BUILDING**

WEATHERBAN Brand Curtain Wall Sealer seals curtain walls of the giant, new Connecticut General Life Insurance Company Building in suburban Hartford, Conn. More than 80% of the wall area is glass. 900 heat-absorbent glass panes (the biggest yet used) measure 8 by 11 feet. Weatherban Sealer seals glass to aluminum channels.



**RESISTS WEATHER** This WEATHERBAN-sealed test wall withstands hurricane fury without leaking . . . simulated 12-inch-per-hour rainfall driven by 130-m.p.h. wind. Building uses prove that WEATHERBAN Sealer can endure sunlight, atmosphere, temperature extremes, too, for years.



**FLEXES LIKE RUBBER** WEATHERBAN Sealer is a two-part polysulphide rubber-based compound. It bends, stretches, compresses with wall movement, doesn't flow out of seam, keeps a solid seal. What's more, it cushions glass and metal, guards them from breaking and cracking under buffeting winds.

*seals curtain walls*
*more securely four ways!*

# WEATHERBAN

**BRAND CURTAIN WALL SEALER**

Here's a dramatically new sealer that offers you four-way greater dependability in curtain wall sealing . . .

It's WEATHERBAN Brand Curtain Wall Sealer, made by 3M, based on synthetic rubber, specially designed for curtain walls.

Workmen apply WEATHERBAN Sealer by pressure or flow gun. Yet WEATHERBAN Sealer is practically 100% solids. It cures *chemically* into a durable, elastic, solid rubber seal. And it cures without shrinkage.

You get a seal that can resist deterioration, adhere, flex and endure through years of exposure . . . where conventional caulking compounds often fail.

As the result of 13 years of experience with aircraft sealers, 3M has produced in WEATHERBAN a sealer of exceptionally long service life. It endures vibration, sunlight, atmosphere, oils, solvents or gases, still seals tightly.

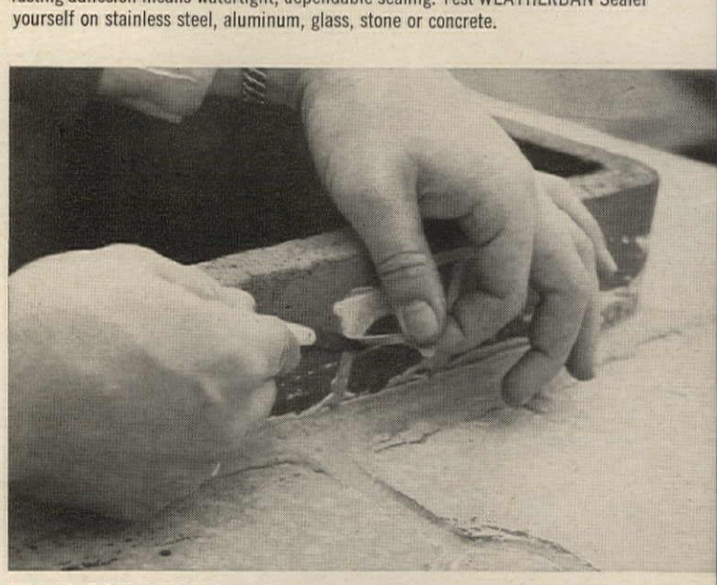
What's more, WEATHERBAN Sealer prevents wall materials from contacting one another, minimizes galvanic corrosion. Three pleasing colors (aluminum, black, tan) blend with buildings.

Let the 3M technical staff work out test application or actual application procedures with you.

**SEND FOR FREE LITERATURE**

Learn the full facts about WEATHERBAN Sealer now! Send for free booklet: *Performance Facts About WEATHERBAN Brand Curtain Wall Sealer*. Fill out and mail the handy coupon below today. Or write on your business letterhead to:

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Dept. 22, 417 Piquette Ave., Detroit 2, Mich. General Sales Offices: St. Paul 6, Minnesota
Export: 99 Park Ave., N. Y. 16, N. Y. Canada: P. O. Box 757, London, Ont.



**ADHERES** WEATHERBAN Sealer bonds these metal discs, doesn't lose adhesion even when a 125-pound anvil is supported from them. Such positive, lasting adhesion means watertight, dependable sealing. Test WEATHERBAN Sealer yourself on stainless steel, aluminum, glass, stone or concrete.



**SEALS FOR YEARS** You enjoy minimum upkeep. Still elastic after seven years, WEATHERBAN Sealer sticks tight to glazed parapet caps on this San Francisco rooftop. This is why building owners are picking WEATHERBAN Sealer to repair leaks in curtain walls originally sealed with conventional sealers.

PRODUCT OF 3M COMPANY RESEARCH




**Minnesota Mining and Manufacturing Company**
**Adhesives and Coatings Division, Dept. 22**
**417 Piquette Ave., Detroit 2, Michigan**

Send me free literature on WEATHERBAN Brand Curtain Wall Sealer. Please (do) (do not) have a 3M Field Engineer contact me at this time.

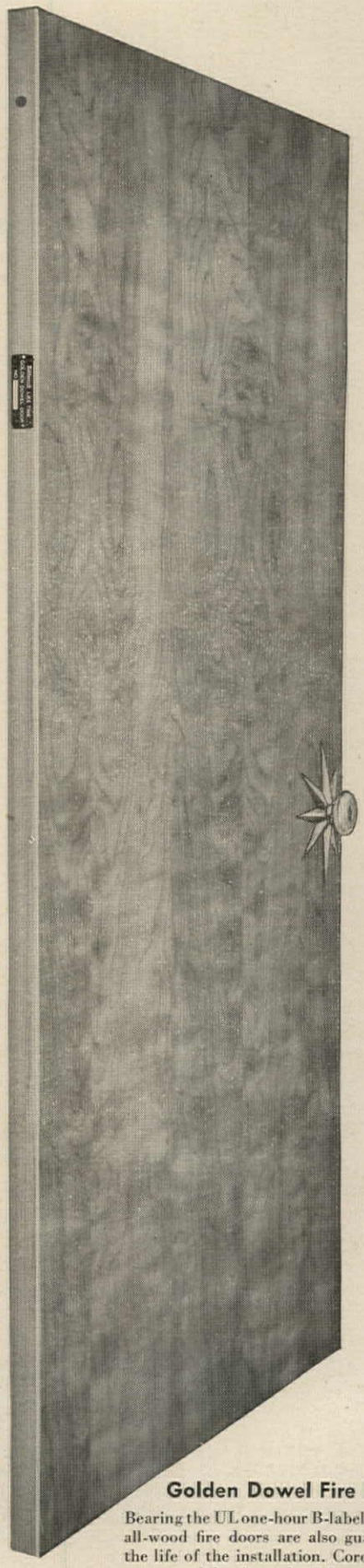
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*Backs up your promise of quality... the doors with the lifetime guarantee*



# RODDISCRAFT

## Golden Dowel Doors

**(all wood, solid core)**

The golden registration plate on every Roddiscraft Golden Dowel Solid Core Door is proof to your clients of the quality you are giving them—a door that will stay straight, true, beautiful for the life of the installation. This lifetime guarantee dramatizes the fact that you have provided the finest door.

Of course, what makes possible such a long-term guarantee is the unique construction of Roddiscraft Golden Dowel Solid Core Doors. They are all wood, with the proven stability of staved core construction. In addition, each Golden Dowel Door is TIME CONDITIONED by an exclusive Roddis process. The result is a door that is not only sound-deadening and fire-resistant, but a door that defies time.

For complete specifications, write for our new door catalog, or see Sweet's Architectural File.

**Roddiscraft**

**... one source for all your wood doors**

**SOLID CORE • HOLLOW CORE • X-RAY • FIRE (B LABEL)**

**in a wide variety of beautiful woods**

**Golden Dowel Fire Doors**

Bearing the UL one-hour B-label plate, these all-wood fire doors are also guaranteed for the life of the installation. Cores are homogeneous slabs formed of fireproofed wood particles bonded with phenolic adhesive under pressure and heat. This new core construction assures lifetime stability, low heat transmission, good sound resistance and superior screw-holding ability.

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# a simple grace prefabricated in metal...

## crafted by Overly

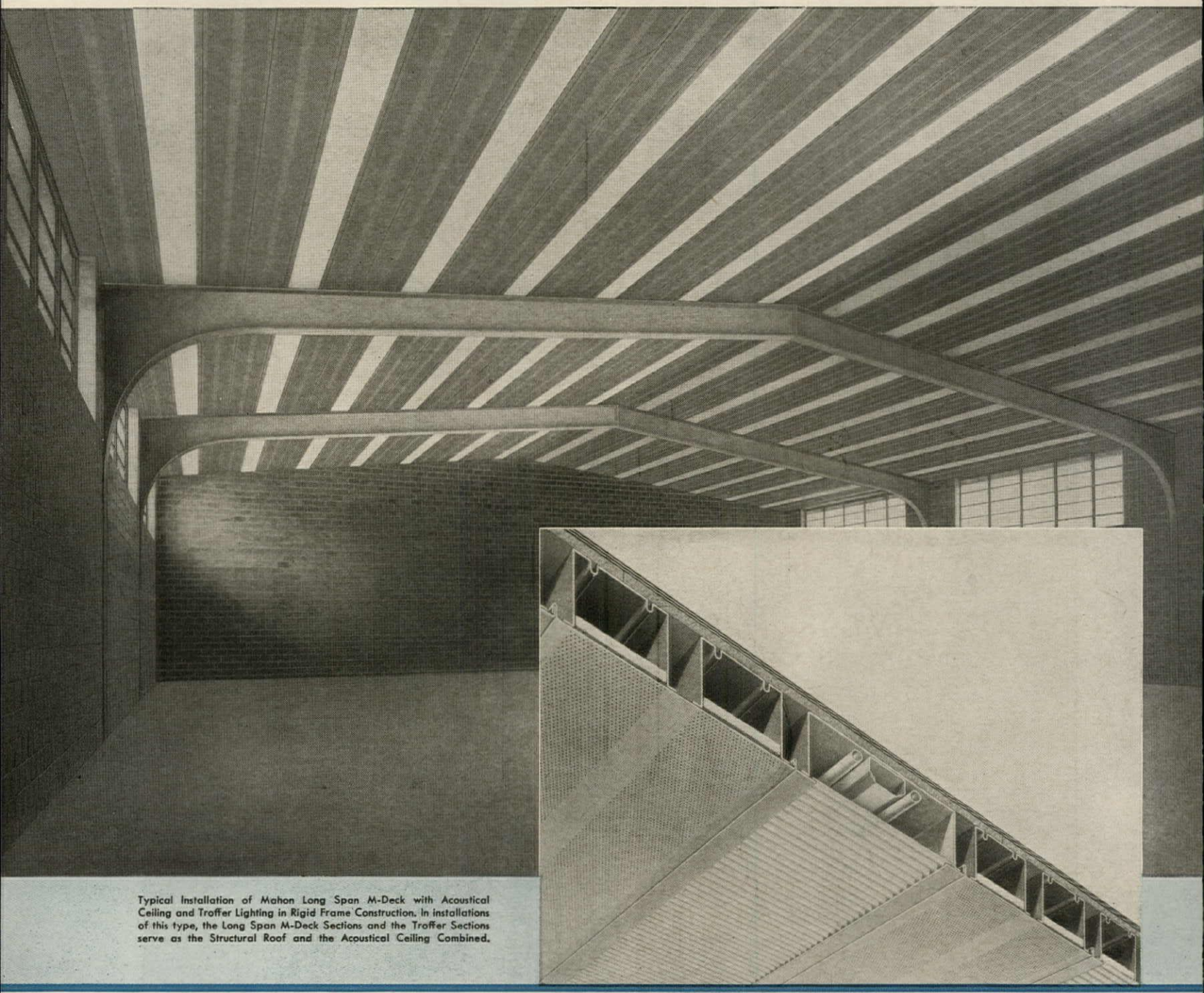
METAL PRODUCTS SINCE 1888



*Nothing ornate—just a simple, direct statement of faith crafted in sheet aluminum by Overly for Grace Methodist Church, South Bend, Indiana. Architect K. W. Williams of Kokomo, Indiana, commissioned Overly to craft this 27' spire in 1/8" aluminum. To minimize shipping and erection costs, Overly prefabricated and assembled the structure, then shipped to church site in two complete sections. Here the aluminum skin was bolted to the structural steel framework at top and bottom of belfry by 5/16" stainless steel bolts. Cross was crafted by Overly from 2" x 2" x 1/2" extruded aluminum tubing.* ● *Overly can prefabricate your spire quickly, economically in any of the permanent, weather-resistant metals.* ● *For a historical study of spire building, write today for "Pointing to God."*

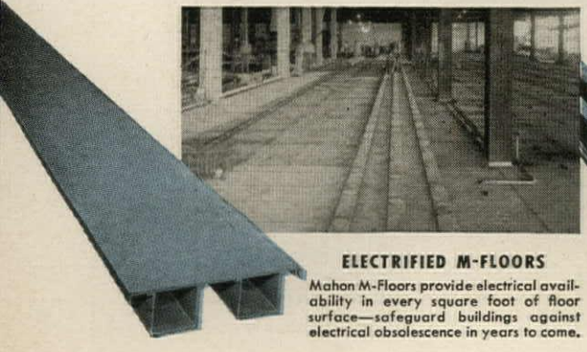
**OVERLY MANUFACTURING COMPANY**
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# M-DECKS Now Serve





Typical Installation of Mahon Long Span M-Deck with Acoustical Ceiling and Troffer Lighting in Rigid Frame Construction. In installations of this type, the Long Span M-Deck Sections and the Troffer Sections serve as the Structural Roof and the Acoustical Ceiling Combined.



**ELECTRIFIED M-FLOORS**

Mahon M-Floors provide electrical availability in every square foot of floor surface—safeguard buildings against electrical obsolescence in years to come.



**CONCRETE FLOOR FORMS**

Mahon Permanent Concrete Floor Forms in various types meet virtually any requirement in concrete floor slab construction over structural steel framing.



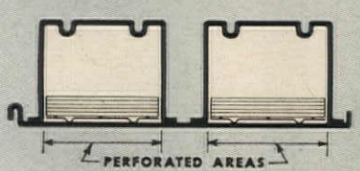
**ACOUSTICAL and TROFFER FORMS**

Provide an Effective Acoustical Ceiling with Recessed Troffer Lighting—Serve as Permanent Forms in Concrete Joist and Slab Construction of Floors and Roofs.

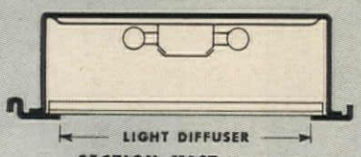
# as the Structural Unit, the Roof Deck and Interior Finish Material as Well

## . . . Acoustical Treatment can also be Included in the Same Package!

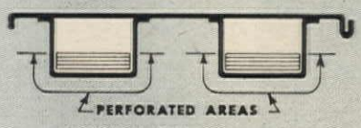
**MAHON**
ACOUSTI-STRUCTURAL
**LONG-SPAN M-DECK SECTIONS**



**SECTION M2SR** (Acoustical)



**SECTION M1ST** (Troffer)



**SECTION M2** (Acoustical)



**SECTION M3** (Acoustical)



**SECTION M3R** (Acoustical)

Mahon Long Span M-Decks are ideal for combined roof-ceiling construction in such structures as auditoriums, armories, sports arenas, churches, and other types of buildings where exposed truss or rigid frame construction is employed.

An M-Deck is a structural roof and ceiling combined . . . its structural sections span from wall-to-wall or from truss-to-truss, eliminating the cluttered effect of roof purlins and producing a neat, continuous, flat metal ceiling surface—all of which can be acoustically treated. If recessed lighting is desired, Mahon Troffer Sections can be included in this type of roof-ceiling construction in any ratio to meet specific lighting requirements.

Mahon M-Deck Sections and Mahon Troffer Sections are roll-formed from galvanized, structural quality steel . . . they are permanent and indestructible. Exposed surfaces in roof-ceiling construction can be readily painted to match or harmonize with any interior decor.

All Mahon Long Span M-Deck Sections can be furnished with bottom metal perforated and sound absorbing material inserted to provide a highly effective acoustical ceiling . . . Noise Reduction Coefficients range up to .85 in Mahon Sections recommended for this use.

Some of these Mahon Sections do not appear in the current Sweet's Files. Why not have a Mahon sales engineer call and bring you up to date on new Mahon products now available for Floor, Roof, and Combined Roof-Ceiling Construction.

**THE R. C. MAHON COMPANY • Detroit 34, Michigan**
Sales-Engineering Offices in Detroit, New York and Chicago
*Representatives in all Principal Cities*

# MAHON



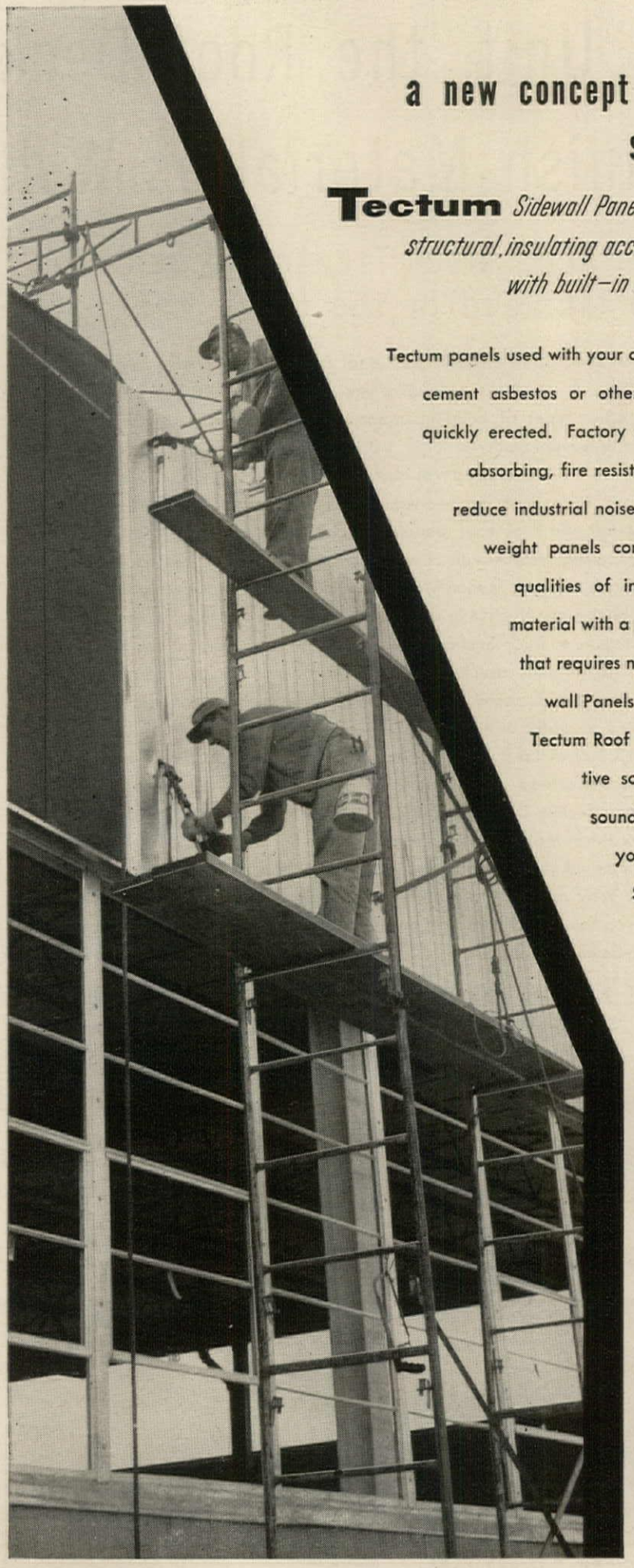
**INSULATED METAL WALLS**
Three Distinctive Patterns with "U" Factor Superior to that of Conventional Masonry Wall with Lath and Plaster. Erected up to 60 Ft. in Height without a Horizontal Joint.



**UNDERWRITERS' RATED FIRE WALLS**
Mahon Metalclad Fire Walls carry two Hour Rating by Underwriters' Laboratories, Inc., for Use as Either an Interior Dividing Fire Wall or an Exterior Curtain-Type Fire Wall.



**ROLLING STEEL DOORS**
Standard Manually, Mechanically or Power Operated Rolling Steel Doors and Grilles. Underwriters' Labeled Automatic Closing Rolling Steel Fire Doors and Fire Shutters.



# a new concept in industrial sound control

**Tectum** *Sidewall Panels...*
*structural, insulating accoustical, fire resistant with built–in noise reducing values.*

Tectum panels used with your choice of steel, aluminum, cement asbestos or other outside coverings are quickly erected. Factory sidewalls become sound absorbing, fire resistant, insulating walls that reduce industrial noises effectively. These light weight panels combine all the desirable qualities of insulation and acoustical material with a pleasing textured surface that requires no finishing. Tectum Sidewall Panels used in combination with Tectum Roof Deck are the most effective solutions to the industrial sound control problem. Have you investigated Tectum? Send for the facts today.

●

Tectum Corporation
**105** South Sixth St.
Newark, Ohio

Tectum

*A contribution to better working conditions—everywhere*



CLARK EQUIPMENT CO.
CONSTRUCTION MACHINERY DIVISION
BENTON HARBOR, MICHIGAN



# tough and translucent

## Highly attractive partitions made of Lustrex* provide privacy-plus

The architect finds a highly willing tool in Lustrex styrene. Made up into panels, for example, this Monsanto plastic combines shatter-resistant strength with light weight. It offers wide color choice, great decorative latitude. Lustrex styrene is low in cost. It requires minimum up-keep.

The panel illustrated is being used as a sliding partition in Miami's fabulous new Americana Hotel, designed by Morris Lapidus A.I.A. Made of Lustrex by Lurie Plastics, Inc., Colonial Heights, Va., these "Luraplast Fiber Gold" panels create a rich 3-dimensional decorative gold effect. They are partitions with superior translucency, yet assuring desired privacy. They are rigid, non-warping, washable. They won't rust or mildew and the molded-in color can't fade or chip off.

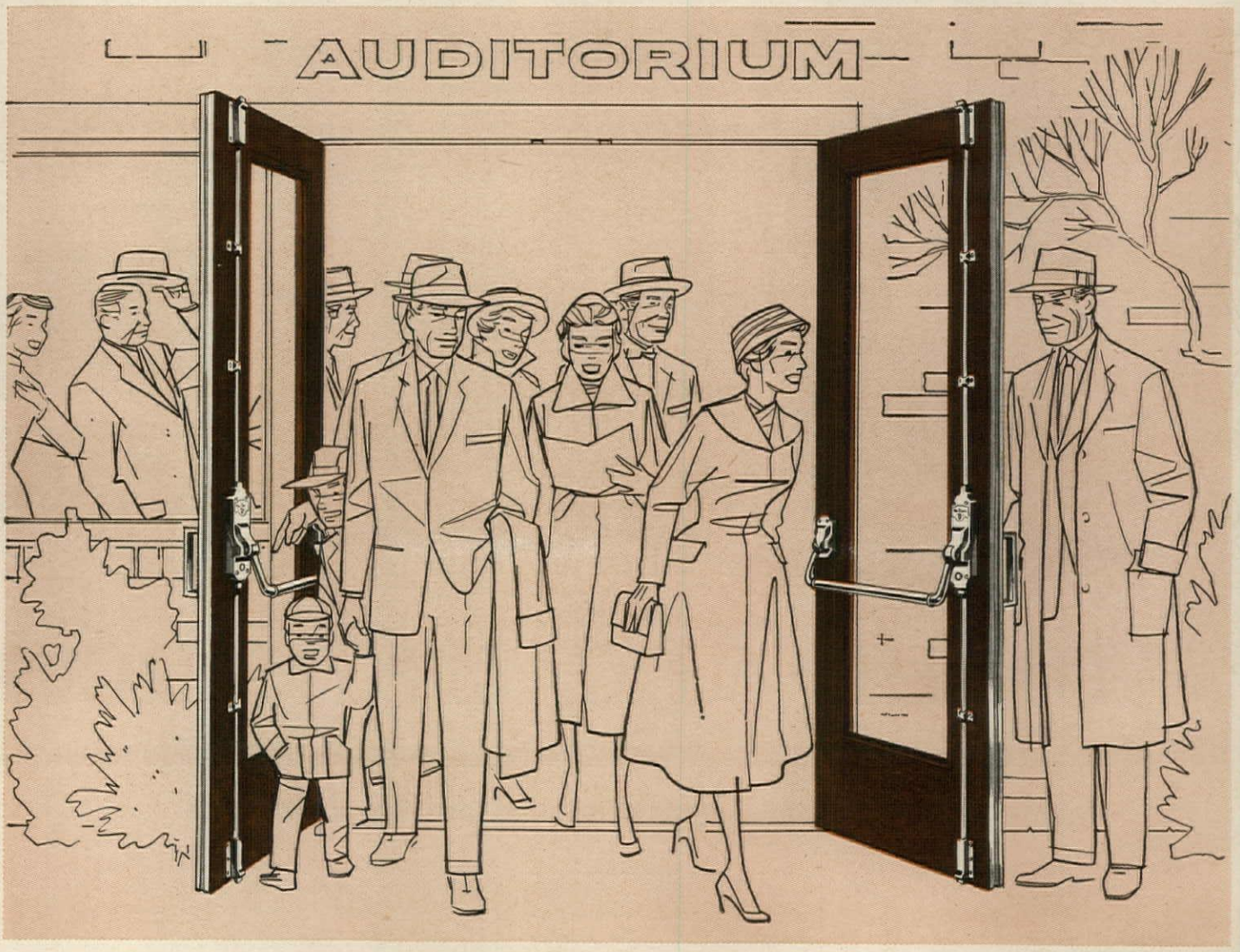
New developments in plastics materials and processing techniques are under constant study by Monsanto's Structural Plastics Engineering Group. You are invited to call on this group for technical counsel in the use of plastics for building or construction.

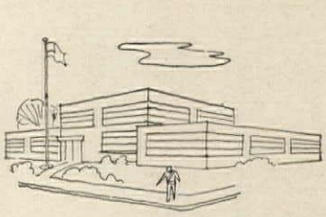
**New Report,** *"Plastics in Housing" has recently been published by the Department of Architecture of the Massachusetts Institute of Technology. The M.I.T. study was made possible by a Monsanto grant-in-aid. Copies are available at $2.00 each. Address Monsanto Chemical Company, Plastics Division, Room 1431, Springfield 2, Mass.*

MONSANTO ®

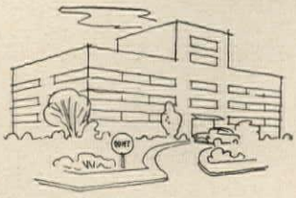
LURAPLAST: REG. U.S. PAT. OFF., LURIE PLASTICS, INC. *LUSTREX: REG. U.S. PAT. OFF.

# Safeguarding the lives of millions







# Von Duprin®

## FIRE AND PANIC EXIT DEVICES

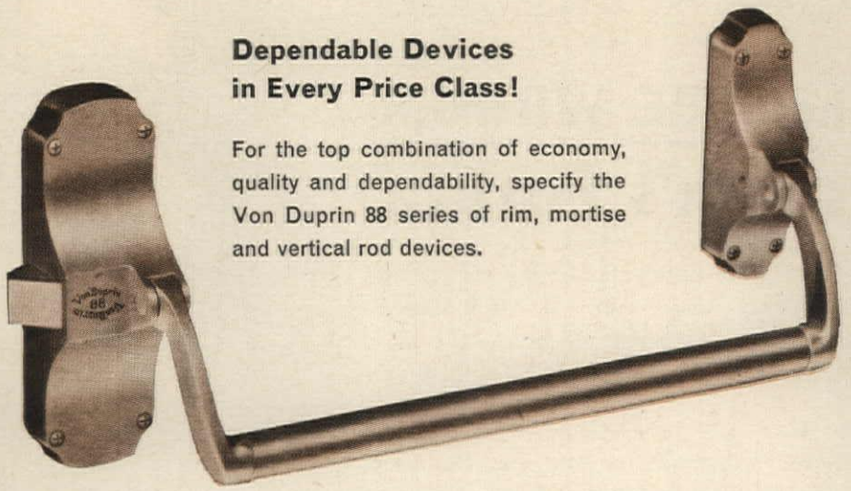
## "THE SAFE WAY OUT"

On schools, churches, hospitals . . . *wherever* people congregate . . . you can depend on Von Duprin exit devices to protect lives.

Choose from a complete line. Select the *right* installation for *any* opening . . . for normal or rugged, demanding service.

Specify Von Duprin! Your Von Duprin "Exit Specialist" will be glad to help you plan the best exit for your needs. If you don't know his name, write direct to factory.

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For the top combination of economy, quality and dependability, specify the Von Duprin 88 series of rim, mortise and vertical rod devices.

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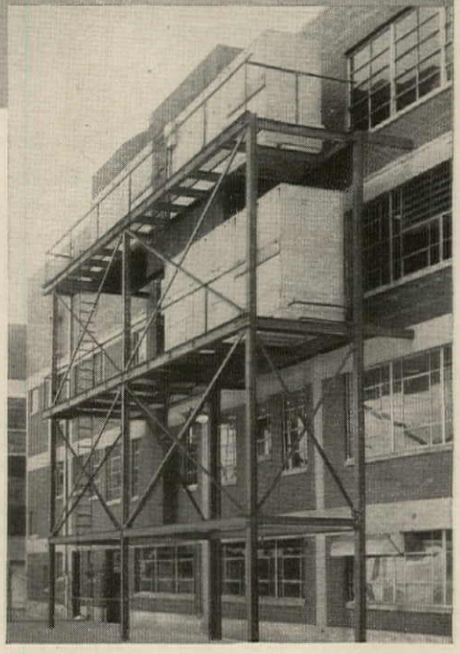



Racing enthusiasts watch in cool comfort from *Airtemp air conditioned* clubhouse of Sportsman's Park track in suburban Chicago. *Consulting Engineers, Contractors:* Acme Temperature Control, Chicago.

# Airtemp The SURE WINNER at Sportsman's Park...

Cooling with minimum installation time and cost is a sure thing —with Airtemp "packaged" air conditioning. It can be used with or without ductwork...to cool either single areas, or multi-story complete buildings, like the Sportsman's Park clubhouse.

Another example of how Airtemp's *complete* line—286 models, biggest selection of any manufacturer—helps American business and industry solve cooling problems with models specifically suited to particular requirements—at *standard-model cost!* And all engineered by Chrysler.



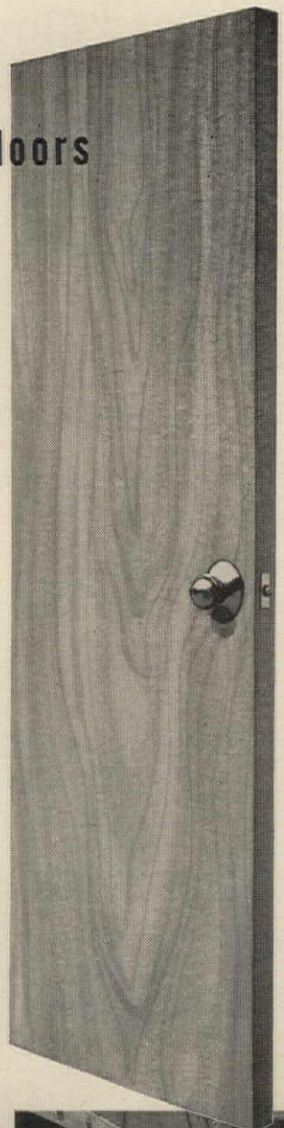
*Outside-mounted* Airtemp units—1 60-ton Model 2660, and 2 40-ton Models 2640—*silently* and *unseen* cool the 160,000 cubic foot clubhouse. Evaporative condensers totally eliminate need for cooling towers, drastically reducing installation and maintenance expense.

Airtemp CONSTRUCTION
DIVISION OF CHRYSLER CORPORATION

**PHONE** your nearby Airtemp contractor. He's in the Yellow Pages. Or—write to Airtemp Construction Division, Chrysler Corporation, Dayton 1, Ohio.

A CHRYSLER DIVISION SPECIALIZING IN AIR CONDITIONING FOR EVERY HOME AND BUSINESS NEED

# All flush doors may look alike . . . but these 9 reasons prove why America's *Finest* doors are Paine



REZO®

FLUSH DOORS

These nine production photographs show the time . . . craftsmanship, precision, care . . . and highly specialized equipment required for the manufacture of Paine Rezo Doors. Backed by over a century of woodworking experience and more than nine million installations, it's no wonder architects, dealers, builders — and home owners—call Rezo Doors America's finest doors!

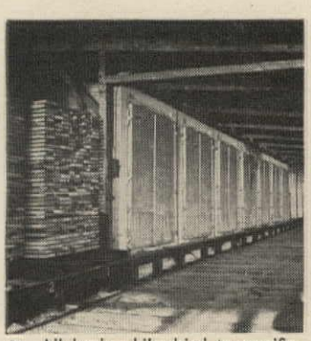
*For information, write:*

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**LUMBER COMPANY, LTD.**

ESTABLISHED 1853 • OSHKOSH, WIS.

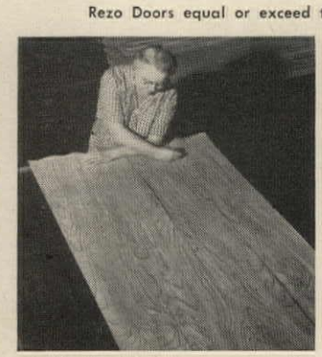
Rezo Doors equal or exceed the requirements of C.S. 200-55



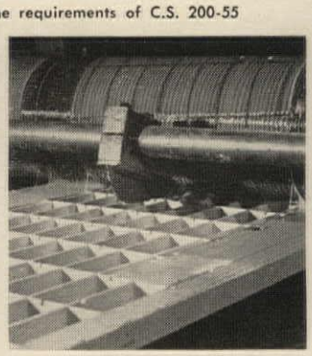
**1** All lumber kiln-dried to specific, and uniform moisture content.



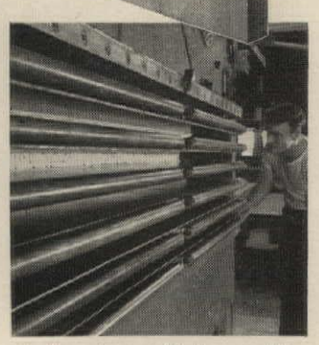
**2** Stiles and rails securely fitted. Stiles are 1 7/16" instead of 1⅛".



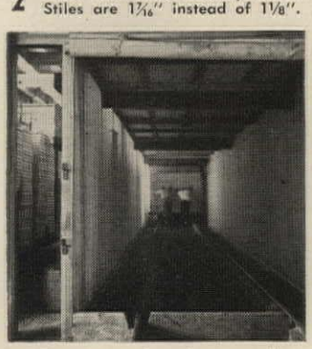
**3** Hand-matched face veneers; the panels ⅛" thick—instead of 1/10".



**4** A complete coating of resin glue is applied by machine.



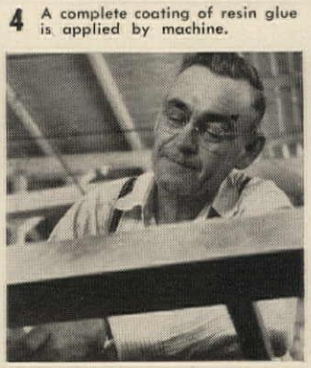
**5** Accurate assembly is assured by controlled heat and pressure.



**6** Doors pass through a complete conditioning cycle in special kilns.



**7** Doors are carefully belt-sanded to a cabinetmakers's finish.

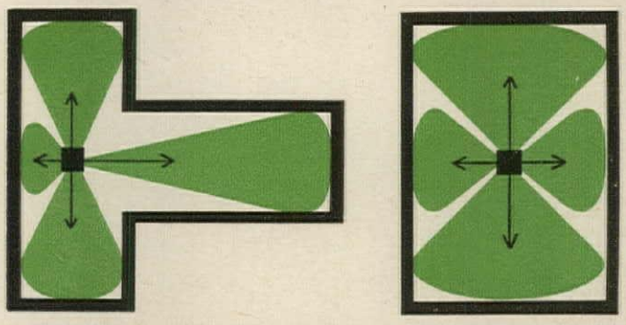


**8** Special doors are custom-made by experienced craftsmen.

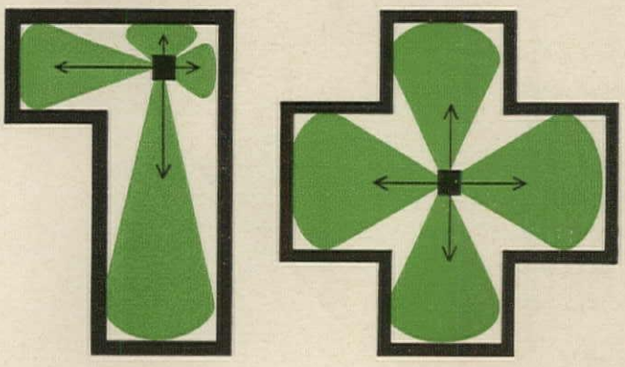


**9** Each door must be painstakingly inspected in oblique light.

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## heating pattern adjusts



## to any floor plan



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For a complete catalog on the "Clover Leaf," call your Carrier manufacturer's agent. Look in the Classified Telephone Book under "Heaters—Unit." Or write Carrier Corporation, Dept. UH, Syracuse, New York.

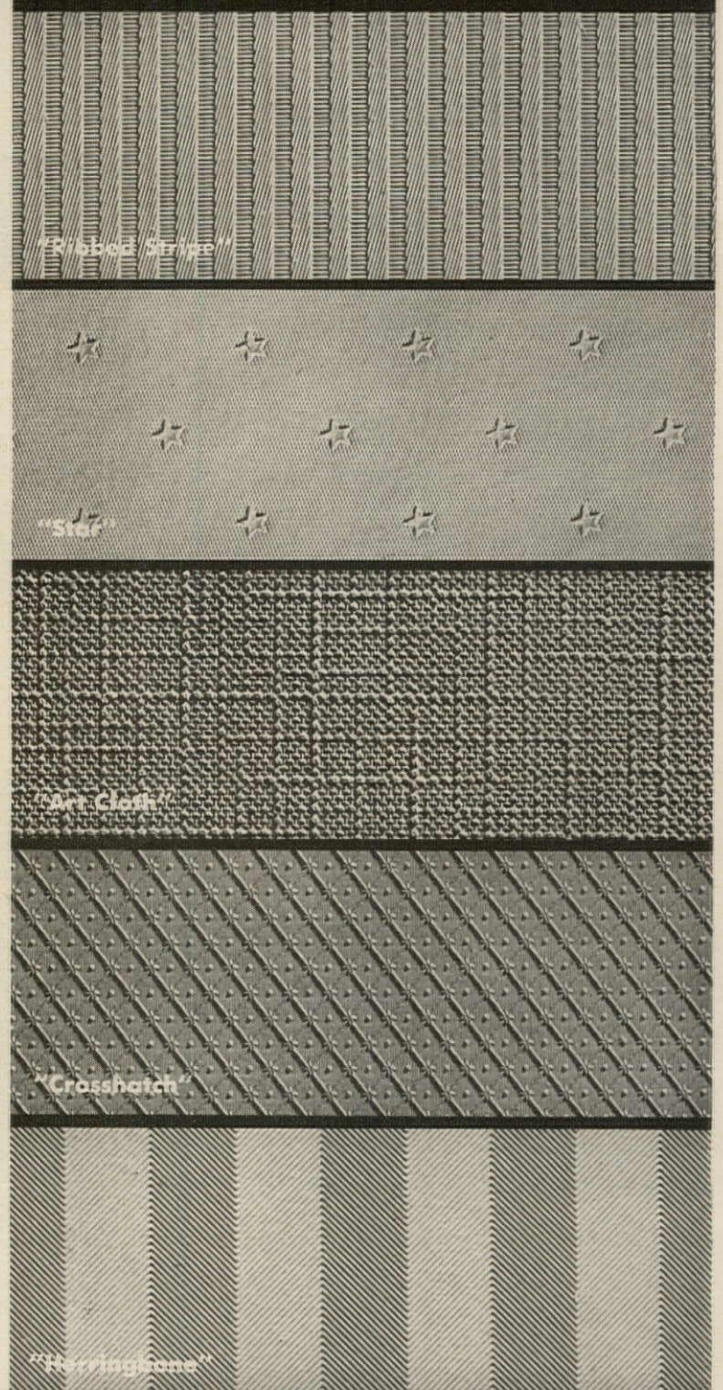
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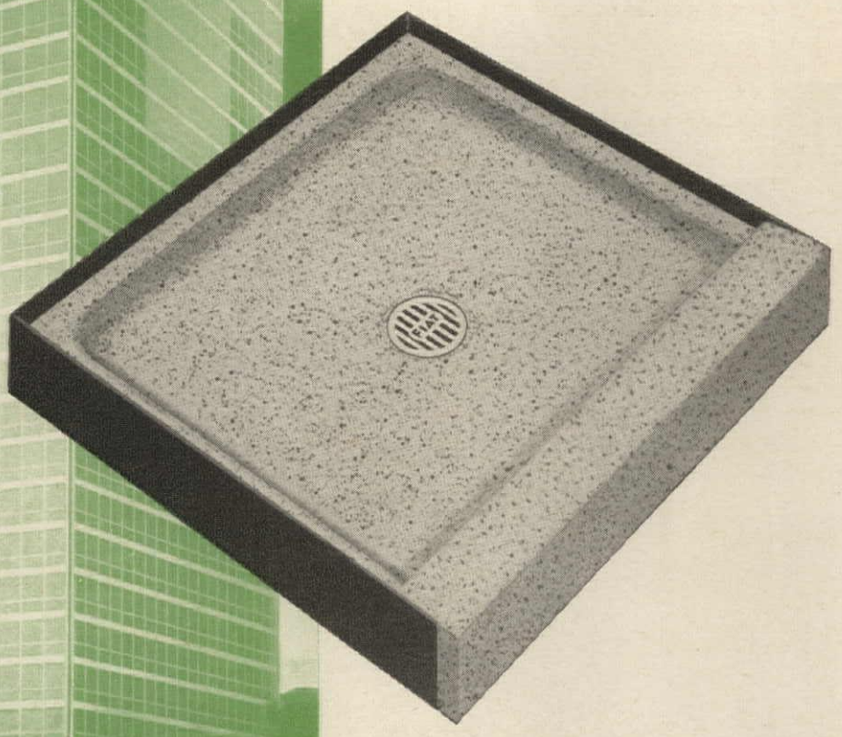
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*Architect:* Mies van der Rohe
*Associate Architect:* Friedman, Alschuler & Sincere
*Gen. Cont.:* Herbert S. Greenwald
*Plumbing Contractor:* Economy Plumbing & Heating Co.
*Plumbing Wholesaler:* Amstan Supply Division of American Radiator and Standard Sanitary Corp.

*The new, six building luxury apartment project to be known as 900 Esplanade and Commonwealth Promenade will have* FIAT *PreCast Shower Floors in every shower. Added proof that products by* FIAT *set the standards of shower quality.*



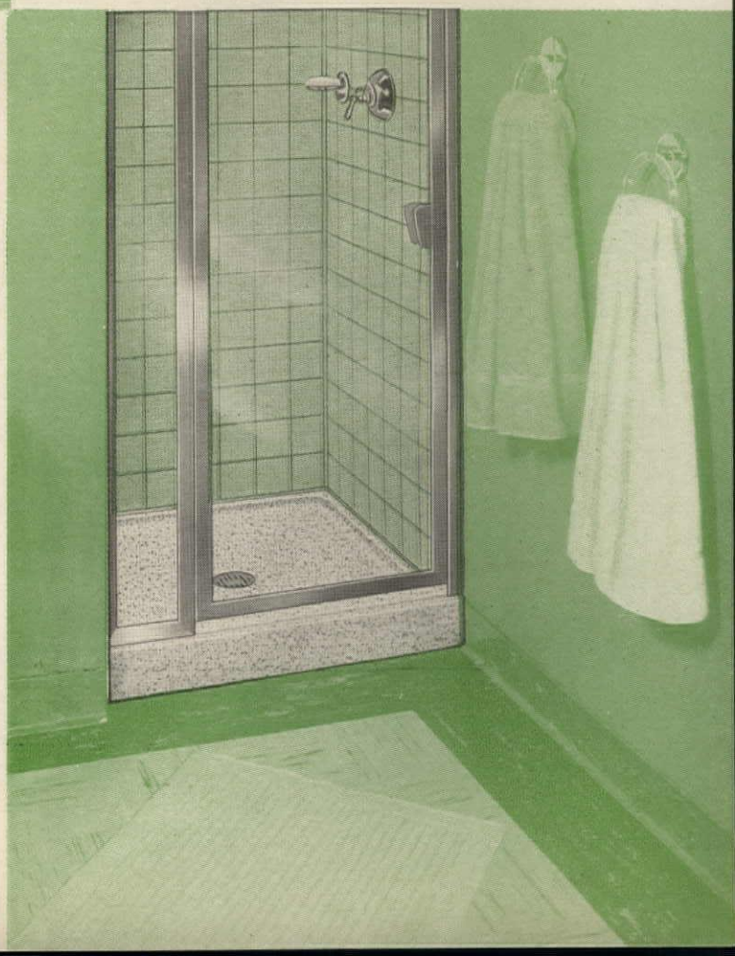
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# Letters

## GOOD TECHNOLOGY

Forum:

The whole idea of an issue of FORUM devoted to Technology (AF, Jan. '57) is a very good one. It should be repeated periodically to keep architects' design mentality aware of the future potential.

You should do as much on esthetics, for without it, we will not have architecture.

MAX ABRAMOVITZ
*Harrison & Abramovitz, architects*
*New York, N. Y.*

▪ FORUM *plans to do at least "as much" for esthetics in its monthly coverage of the art of architecture.*—ED.

Forum:

I congratulate you on bringing together in one issue such a splendid review of the influences that bear on present day architectural design.

Many architects are wondering "whither we goeth," and you have pinned down many of these ideas in this one issue.

GARDNER A. DAILEY, *architect*
*San Francisco, Calif.*

Forum:

Your pictures and description of recent thin shell construction is the most up-to-date stuff I have seen on this subject.

K. P. BILLNER, *president*
*Billner Vacuum Concrete, S.A.*
*Philadelphia, Pa.*

Forum:

. . . Illuminating and perceptive.

RICHARD RINGHEIM
*Barrett Division*
*Allied Chemical & Dye Corp.*
*New York, N. Y.*

Forum:

. . . Congratulations.

MORRIS KETCHUM JR., *architect*
*New York, N. Y.*

## ESTIMABLE PROJECT

Forum:

We were pleased to see your lucid description of the Frank Lloyd Wright Civic Center for Madison (AF, Nov. '56).

Our Citizens' Committee is planning an educational campaign to enlist the aid of the State Legislature to join with the capital city of Madison and share in the costs of the parking facility which is a part of the design of the Center. We are scheduling a dinner in the Frank Lloyd Wright-designed Unitarian Church for the members of the Legislature and plan to distribute reprints from the FORUM.

The city is now engaging the three "expert" estimators for the project, as stipulated in the contract.

MARY E. AMEND, *managing editor*
*Land Economics*
*University of Wisconsin*
*Madison, Wis.*

## PROFITABLE CENTERS

Forum:

The articles on shopping centers in the December FORUM are among the most interesting and informative that I have come across. I enjoyed them and shall profit by them.

ROBERT C. GOODMAN
*Goodman-Segar-Hogan, Inc., realtors*
*Norfolk, Va.*

## QUESTIONABLE TASTE

Forum:

Your article on "Popular Taste" (AF, Feb. '57) is intellectual nonsense. Its premise is that there is a dividing line across history called the Industrial Revolution, on the far side of which all was beauty, everyman an artist, on the near side of which all is ugliness, everyman a perpetrator of bad taste. This historical premise is not controversial; it is just plain untenable.

The prehistoric cave was not a thing of beauty. The wattled hut was just a dump, and an ugly one, on man's long travels up from the savanna grass of East Africa. The great bulk of white-stone Irish cottages, Italian farmsteads and the like, whatever latter-day charm they may have on picture postcards, are ill-proportioned, ugly, damp and pestilential places in which to live. Indeed, if there is one generalization that may be made about man's history it is that ugliness is a constant, beauty a rarity, whatever moment you may be looking at. Only the rare cave had cave paintings. The bulk of primitive handicraft is ugly stuff, of archaeological interest mainly.

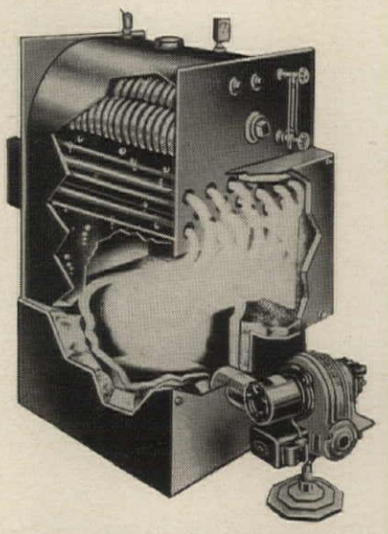
To maintain otherwise is simply the weary old intellectual gambit of idealizing the past (from which, indeed, we have much to learn, but realistically) in order to beat over the head the hateful present, which, considering the thinly populated past with which it is being compared, has no more than its quota of ugliness. The pre-industrial world was more vacant than any we can now imagine, so that man-made ugliness tended to be lost in it, especially from present hindsight.

MATTHEW PETERS, *designer*
*Chicago, Ill.*

*continued on p. 90*


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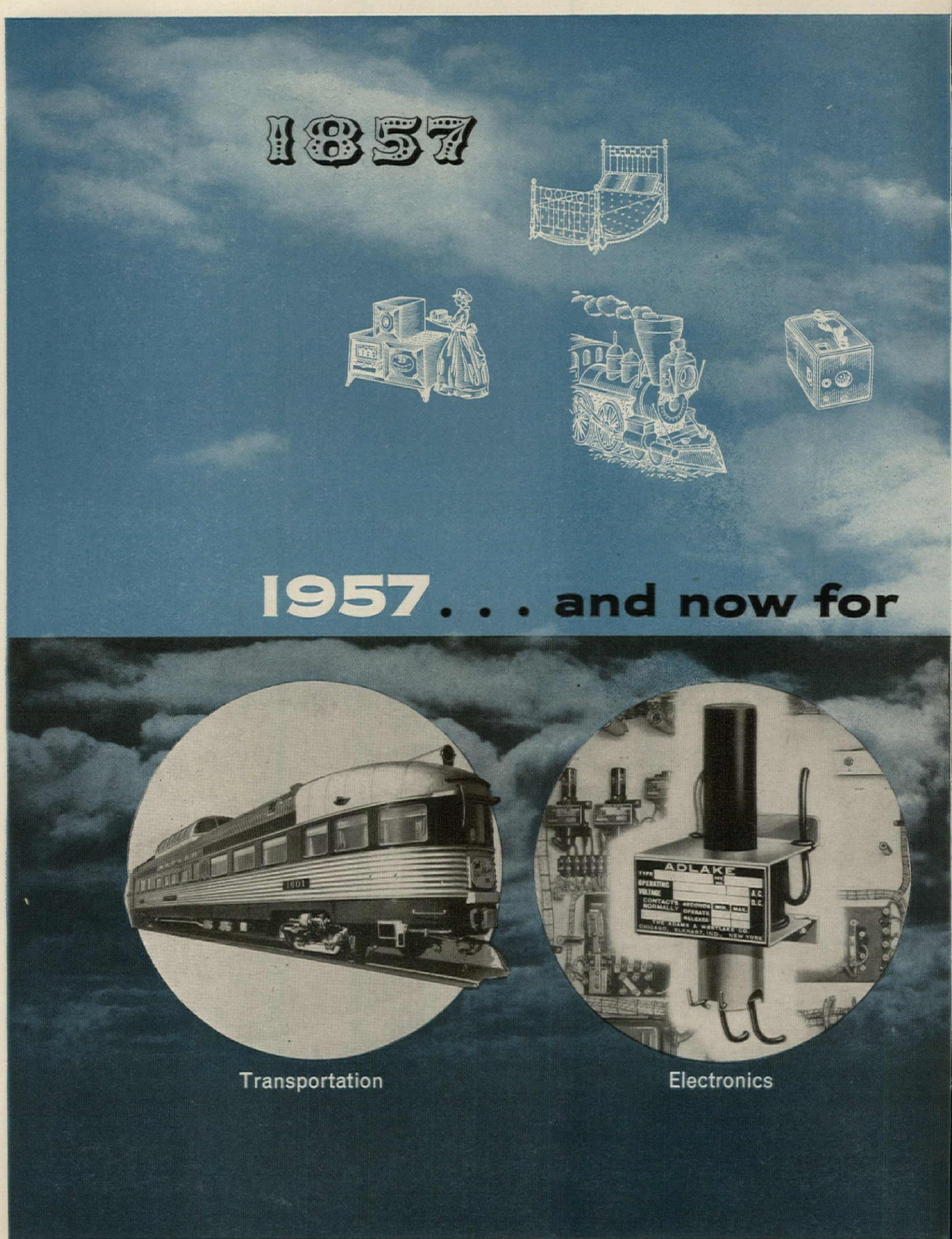
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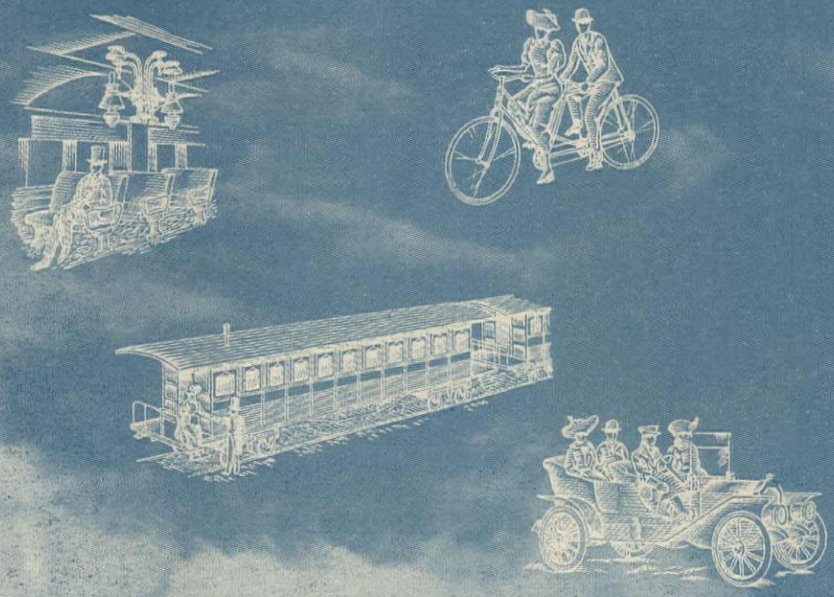
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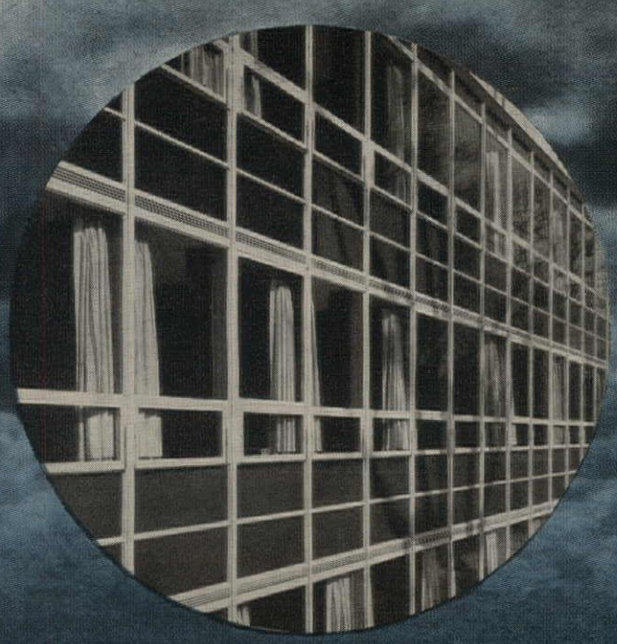
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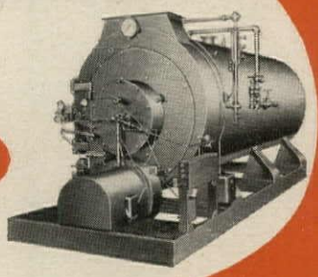
A lot of history has passed in our first hundred years. We have seen sweeping changes take place in every area of human experience. But Adams & Westlake has not changed in policy or in dedication to the maintenance of product quality. Every Adlake product must be as excellent as our 100 years of know how can make it. This assures continuing growth for us and better products for our customers in the transportation, electronics and building construction industries.

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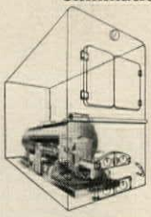


like a
TRANSISTOR?



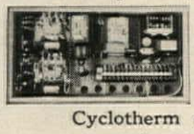
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### BASIS FOR AWARDS

Forum:

We have been following with great interest your many fine presentations of school designs. These have indeed been helpful in our attempt to keep abreast of new developments in the field.

However, we protest the method by which juries of the AIA and its local chapters select schools for awards and the methods by which you select schools for publication.

It is indeed unfortunate and often times misleading that such awards are made solely on the study of working drawings, models and other renderings. We are certain that should the review board make dynamic rather than static visits to each prospective award project prior to selection and consult with persons using the facility, several so-called projects of merit would be eliminated from competition.

We hope the method of judging projects for awards will be re-evaluated to include proved functional facilities, rather than on a basis of "something tried that is new."

A. H. GLANTZ
*Coordinator of Business Advisory Services*
*County of San Mateo*
*Redwood City, Calif.*

▪ *All buildings that receive important mention in* FORUM *have been seen*—ED.

### PLANNING BEYOND TODAY

Forum:

We are now struggling with the problem of planning and providing for the future of this rapidly growing, young, suburban city. As a one-man planning department I have been trying to impress our public bodies with the importance of seeing beyond today. It is an uphill battle.

A portion of the January FORUM—A New Approach to the City—is particularly timely in this connection.

JOHN F. HERMAN, *planning director*
*The City of Bellevue*
*Bellevue, Wash.*

### URBAN RENEWAL

Forum:

We read with great interest your article in the October issue, "How to Get Renewal Off Dead Center." It is indeed a fine statement of what can be done by citizens and government working in cooperation. Madison has recently organized a metropolitan government committee to look into many of the same problems which affect our urban areas.

WALTER K. JOHNSON, *planning director*
*Plan Commission*
*Madison, Wis.*

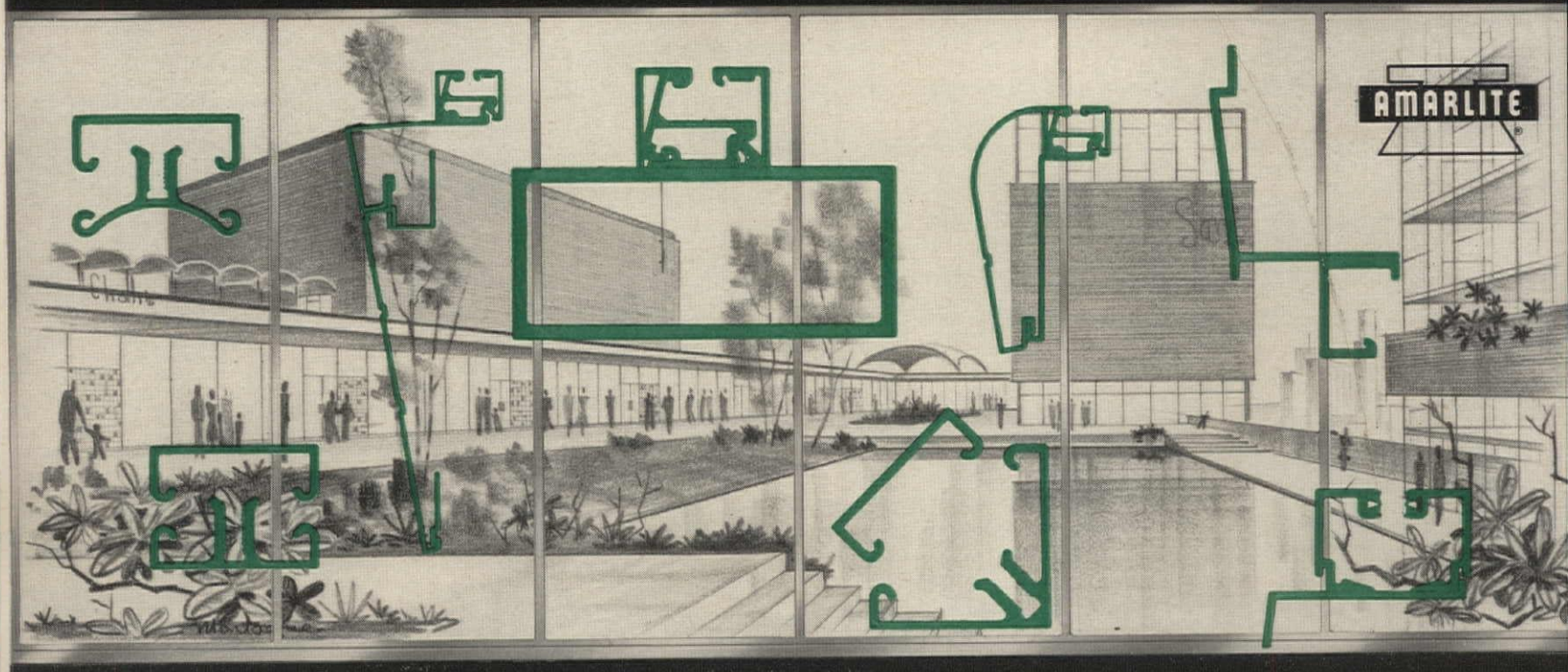
### AIR FORCE ARCHITECTURE

Forum:

Having spent the past four years as an architect in uniform with the Air Force,

*continued on p. 92*

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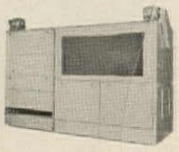
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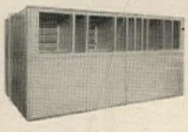
SELF CONTAINED AIR CONDITIONERS



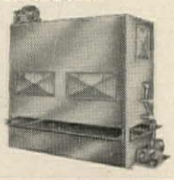
FAN & COIL UNITS



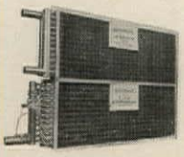
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I have dealt with many architects and have made some observations:

- The multibillion dollar construction program is run by engineers. Architects have no civil service status and are "second cousins" in the uniformed services.
- Architects are getting a very small slice of a multibillion dollar business. Engineers and promoters who hire architects are getting most of it.
- Fees paid to architects are sometimes ridiculously low (I speak from experience, having negotiated some of the contracts).
- Poor design is the rule rather than the exception as poorly conceived definitive drawings must be followed.
- Cost to the taxpayer is high. Corps of Engineers' administrative overhead is 9% of contract cost and here under the Navy it runs as high as 43%.

(Name withheld), *architect*
*Major, USAF*
*c/o Postmaster, N.Y.*

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RICHARD MASON, *managing director*
*William Mason & Son, Ltd.*
*Leeds, England*

## ERRATUM

▪ *Regrettably, Stanley & Wright were not credited as architects of the Solar Building in Albuquerque (AF, Jan. '57)*—ED.

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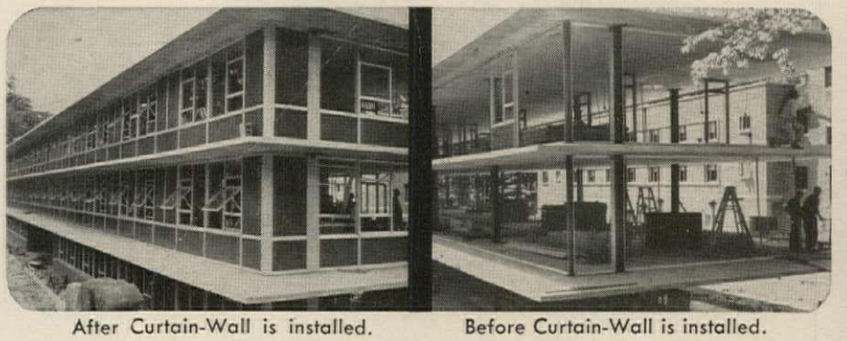
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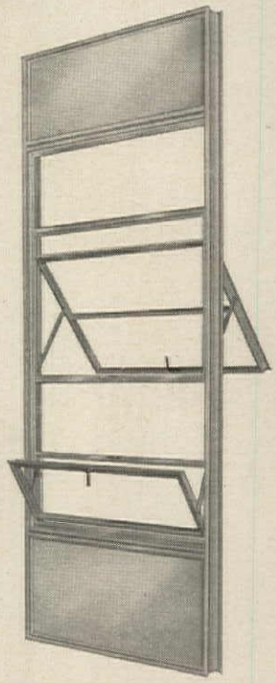
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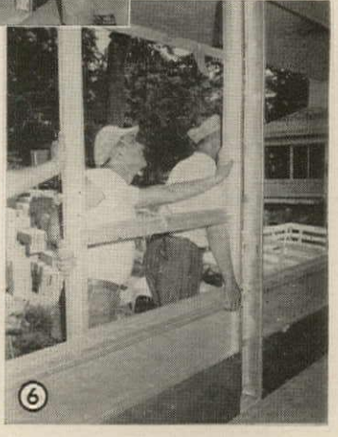
3. Interlocking window-panel into position.







4. Caulking interlock grooves before positioning mullion.
5. Positioning Bayley adjustable-width mullion.
6. Positioning window-panel — using interlock groove as slide.



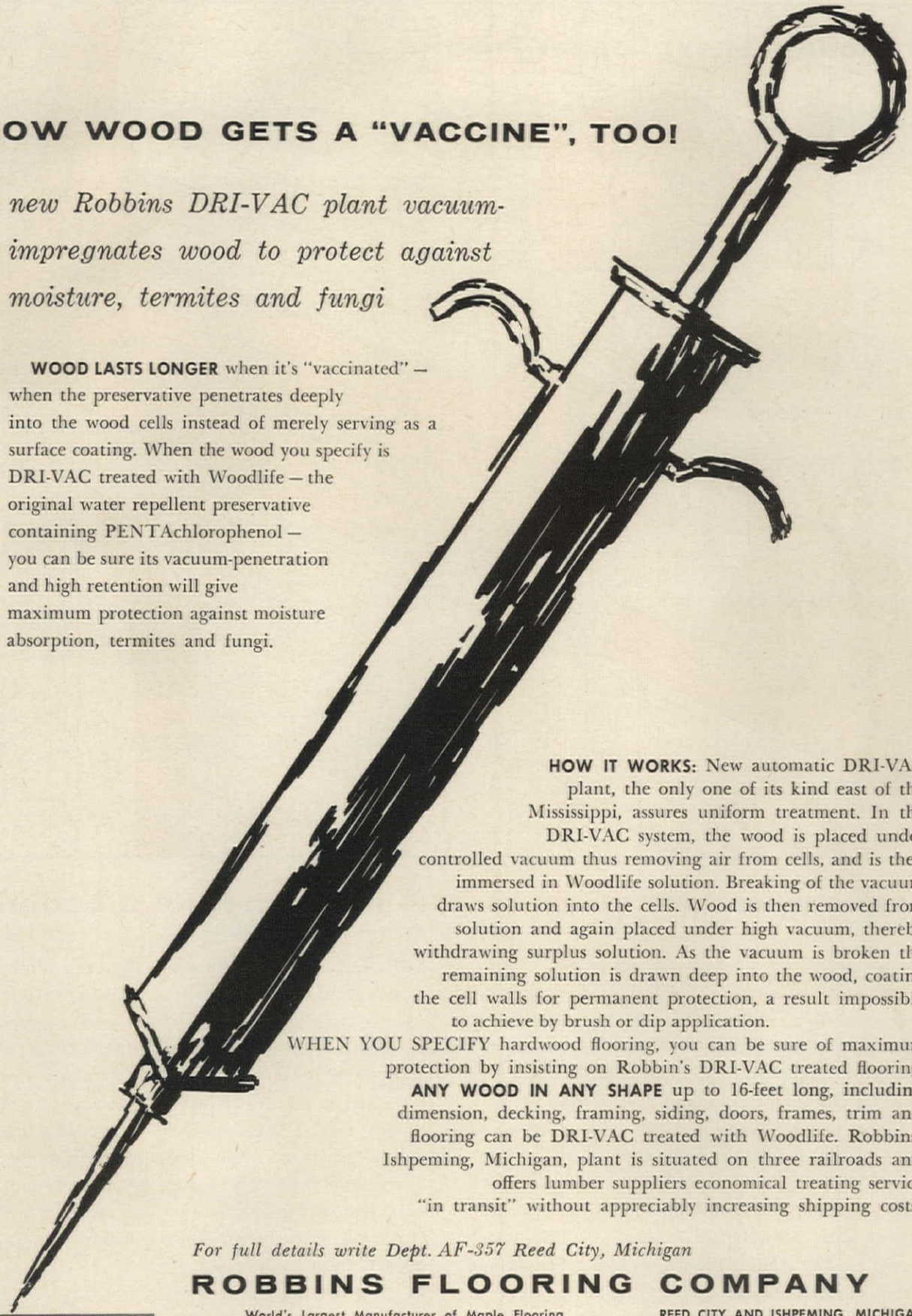
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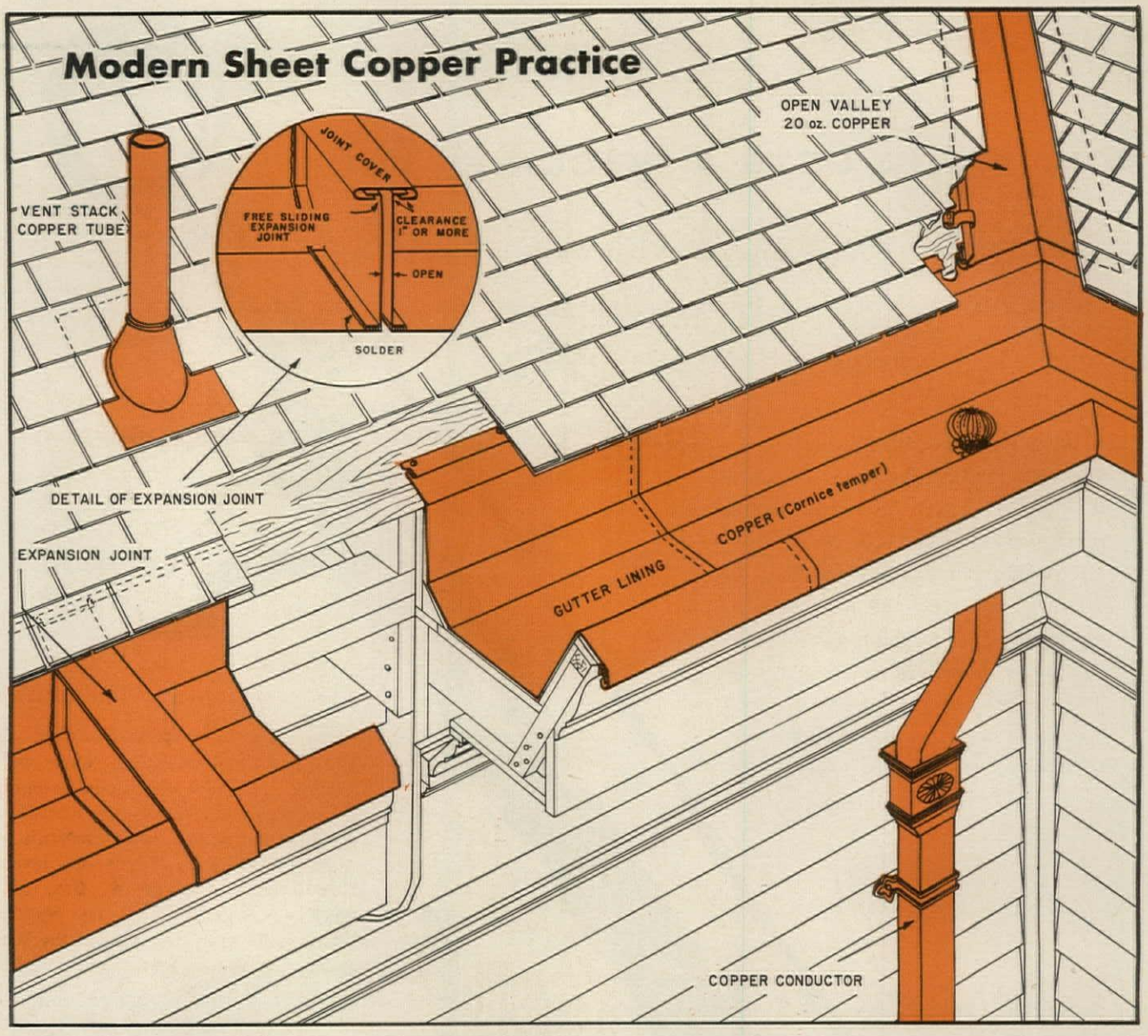
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A few simple rules learned from experience should guide their design and construction.

The copper should be of a gage in keeping with the scale of the work. For example, the gutter shown in the drawing, with the 8-inch-wide bottom commonly used for houses, should be of 16-ounce copper. A bottom 12″ wide requires 20-ounce copper . . . 18″ wide, 24-ounce copper . . . anything wider, 32-ounce copper.

It is important that the copper be of cornice temper so that stresses from expansion and contraction can be distributed and absorbed.

All gutters must have free-sliding edges and expansion joints located midway between downspouts.

For detailed recommendations and suggested specifications on this and many other uses of copper in sheet metal construction, send today for your free copy of The American Brass Company's new Publication C-1, "Modern Sheet Copper Practices." It is a practical guide—designed for architects, specification writers, and sheet metal contractors—with clear, concise suggestions for meeting everyday problems. Just write The American Brass Company, Waterbury 20, Conn.

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# Lee Johnson resigns housing conference post; Wright to design Baghdad opera



JULES SCHICK

WRIGHT

### *OPERA AND POETRY*

Off on a real life Arabian Nights commission, **Frank Lloyd Wright** was due to leave for Baghdad this month to design an opera house for the Iraqi government. "I shall have two acres in the middle of the city, and no cost limitations," he exulted. "I would not give a hoot to build an opera house in New York or London, but Baghdad is a different story."

And at Loyola University in Chicago, one of America's outstanding engineers was the donor of a fund that was financing a series of poetry readings this semester by **Robert Frost, Dame Edith Sitwell, Karl Shapiro, Allen Tate** and **E. E. Cummings.** This was noted Bridge Designer **David B. Steinman**, 70, who is also a poet and philanthropist and over the years has given the Columbia University School of Engineering $65,000—a hundredfold return of $650 he obtained from it in scholarship loans a half century ago.

---

### *PUBLIC HOUSING SHIFTS*

Public housing loses one of its outstanding active advocates and most astute lobbyists this month through the resignation of **Lee F. Johnson**, 51, executive vice president of the National Housing Conference since it moved from New York to Washington in 1944. Because of ill health, Johnson plans to return to his native Colorado, where he was publisher of the *Delta County Tribune* before he went to Washington as secretary (1930 to '36) to former Senator **Edward P. Costigan.** For six years (1938 to '44) he was an official in the federal public housing agency in Washington, and just prior to joining NHC was FPHA assistant commissioner for project management.

Harmony was beginning to replace dissension in top management of the Chicago Housing Authority. On Jan. 29 authority commissioners, after a luncheon session with Mayor Daley, "unanimously" urged **Lt. Gen. William B. Kean** (retired) to remain as executive director, with "full authority over all personnel." Gen. Kean agreed to remain, withdrew the resignation he had submitted, effective Feb. 1, because of "discord and dissension" among the commissioners that made it difficult for him to function effectively.

In the family "feuding" that has been shaking the CHA, Chairman **Joseph P. Sullivan** and Architect **John R. Fugard**, staunch supporters of Gen. Kean, also had announced that they would quit, as commissioners, unless Mayor Daley did some reshuffling in the membership of the five-man authority. When the term of Labor Leader **John Yancey** expired at the start of the year he was neither immediately reappointed, nor replaced.

---



JOERN

### *PROFESSIONAL ELECTIONS*

Chicago Realtor **Charles E. Joern**, whose Village Market shopping center in La-Grange, Ill., has won national recognition for its planning features, was elected president of the Urban Land Institute, succeeding **Warren L. Morris** of Cleveland. New trustees: **George W. Cox**, of the Atchison, Topeka & Sante Fe R.R.; **Urban A. Denker**, president of the Wheeler Kelly & Hagny Investment Co., Wichita, Kan.; **H. A. Moore**, senior vice president of Chicago Title & Trust Co., and Raleigh, N.C., Builder **J. W. York.**

**Adlai S. Hardin**, a member of the National Academy of Design and winner of the Avery award of the Architectural League of New York, was elected president of the National Sculpture Society; **Cornelius M. Deasy**, of Los Angeles, was installed as president of the large Southern California chapter of the AIA.

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### *OUT, BUT NOT DOWN*

Practical, flinty, impartial Professor **John T. Dunlop**, of Harvard University, submitted his resignation as construction la-

*continued on p. 99*



DUNLOP

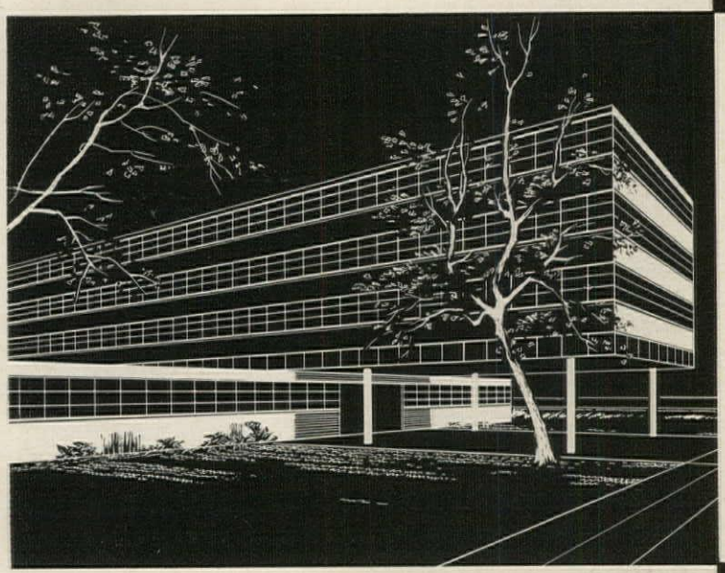
# *Architects are specifying panels cored with* **AIRCOMB*** *for spandrels, curtain walls, skylights and interior decorations*

Where prime requisites are beauty, light weight, strength, rigidity and durability, panels cored with AIRCOMB are the perfect solution. Excellent facing materials with intrinsic color and smooth or textured finishes include glass laminates, plastics, porcelain-enameled steel and aluminum.

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Write for more specific information about its properties and present and potential uses.



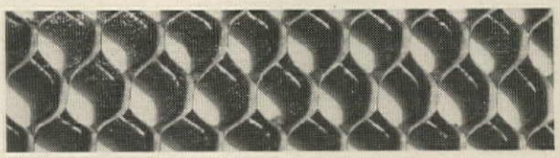



BEAUTY AND UTILITY *are both achieved in this Blue Cross building in Los Angeles through the use of* AIRCOMB *panels faced with porcelain-enameled steel. The panels were laminated by the M. C. Gill Corporation for the California Metal Enameling Company.*

"ARMOREX" CURTAIN WALLS *blend symmetrically with the windows in the handsome Sanjil Apartments building in Evanston, Illinois. The "Armorex" panels are composed of* AIRCOMB *faced with fibreglass and are produced by the Englander Company of Baltimore, Maryland.*

AIRCOMB SPANDRELS *faced with porcelain-enameled steel, in this new Douglas office building in Santa Monica, California, impart a classic simplicity to the functional design.*

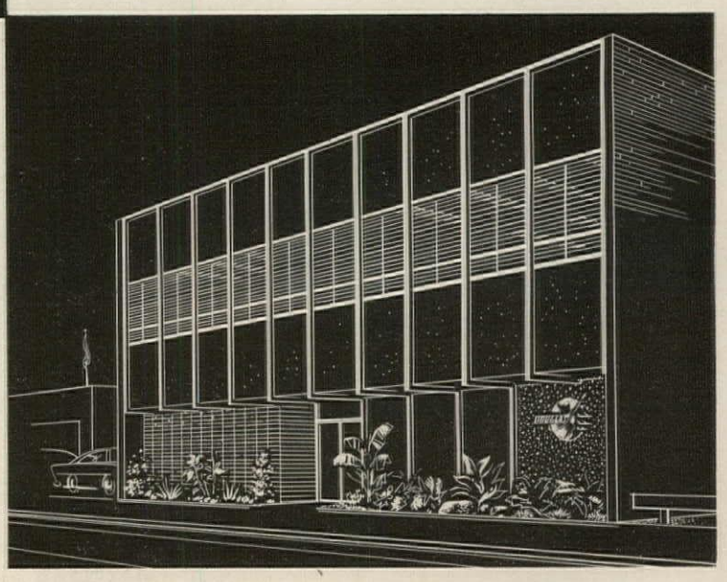
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bor's chief jurisdictional disputes arbitrator, but agreed to stay on the job a little longer until a successor can be found. Its first, and so far its only, chairman, Dunlop has headed the industry's Joint Board for the Settlement of Jurisdictional Disputes since it was established in 1948 shortly after passage of the Taft-Hartley Act. Under the labor law, the National Labor Relations Board is authorized to stay out of jurisdictional labor disputes if "effective machinery" for settling them exists. Since its formation through voluntary agreement of 19 construction labor internationals and employer groups, the Joint Board has settled hundreds of troublesome building union jurisdictional rows with a minimum of work stoppages. Dunlop, 42, declined to give any reason for his resignation, but it was understood it was prompted by the pressure of other responsibilities.

### *AWARD-WINNING HISTORIAN*

At their tenth annual meeting in Detroit late in January the Society of Architectural Historians elected as president **Carroll L. V. Meeks**, associate professor of history (architecture) at Yale, succeeding Columbia University Professor **James G. Van Derpool.** To make his convention complete, Meeks also won the society's award for the most distinguished 1956 book on architecture, *The Railroad Station, an Architectural History* (AF, Feb. '57, Books).



COFFMAN

### *NEW ROBERTSON PRESIDENT*

To head its $50-million-a-year construction products operations, the H. H. Robertson Co. of Pittsburgh elected **Dr. A. W. Coffman** as president, succeeding **Dr. J. H. Young**, who retired under the company's 65 age limit.

Dr. Coffman, moving up from executive vice president, became a Robertson building materials research fellow at Pittsburgh's Mellon Institute of Industrial Research in 1927 and is credited as the inventor of Galbestos, the company's rigid asbestos sheeting. He moved into the company's executive offices in 1938, became vice president for research and development in 1951, and later vice president for production.

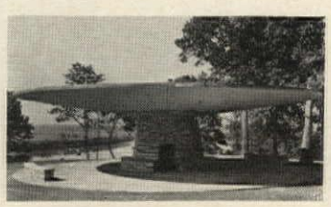
*DIED:* Architect **Irwin Stevens Porter**, 68, member of the District of Columbia board of examiners for architects, former metropolitan Washington AIA chapter president, Jan. 2 in Washington; **John George Niederer**, 101, designer of architectural bronzes in the Library of Congress, the Pennsylvania State Capitol and many public buildings and memorials, Jan. 12 in San Pedro, Calif.; **Edwin H. Denby**, 83, designer of many New York area churches, schools and apartment buildings, former president of the American section of the *Société des Architects Diplomés par le Gouvernment Français,* Jan. 17 in New York; **Richard S. Dill**, 55, nationally known heating and air-conditioning engineer of the Bureau of Standards, Jan. 17 in Washington; **Herman J. Esser**, 91, designer of the Gimbels store and many large Milwaukee area buildings, Jan. 17 in Milwaukee.

### *BUILDER'S MEMORIAL*

Before his death in 1955, Construction Engineer **Albert P. Greensfelder** was a leader in conservation, park and city and regional planning in the St. Louis area, as well as having been head of the Fruin-Colnon Contracting Co., 1930 chairman of the ASCE construction division, 1931 AGC president, and member of the National Capital Planning Commission.

Recently, St. Louis County dedicated a striking Greensfelder Memorial Shelter in Creve Coeur Park—an open, 50′ diameter, cantilevered, upswept roof structure intended not only to honor his park work, but also to express "his life-long interest in reinforced concrete as a design medium" (see cut).

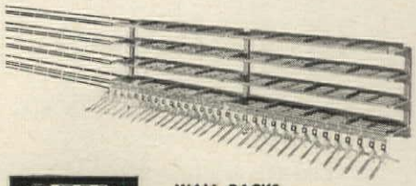
Associated architects for the memorial were **Deneke & Deneke**, and **Murphy & Mackey.** Set in the triangular base that supports its 100-ton circular roof (tapering from 3′-4″ in the center to 4″ at the rim) are three big picnic fireplaces. Over one of these there also is a large marble block memorial plaque designed by Sculptor **Hillis Arnold.** Total cost of the shelter: about $23,000.



J. E. GRANICH

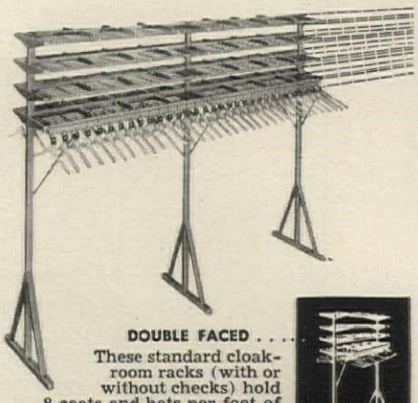
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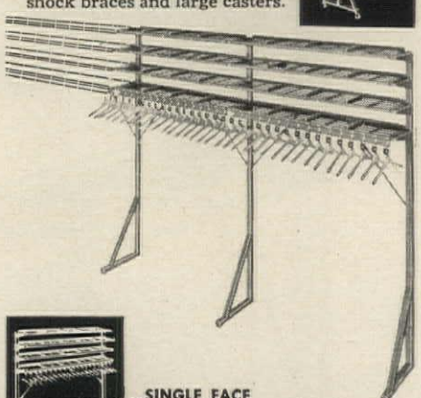


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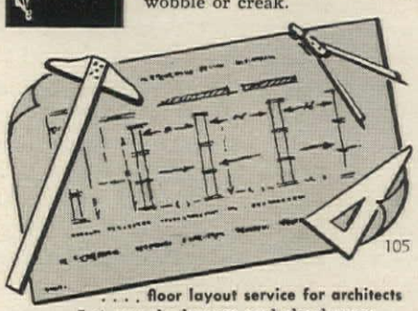
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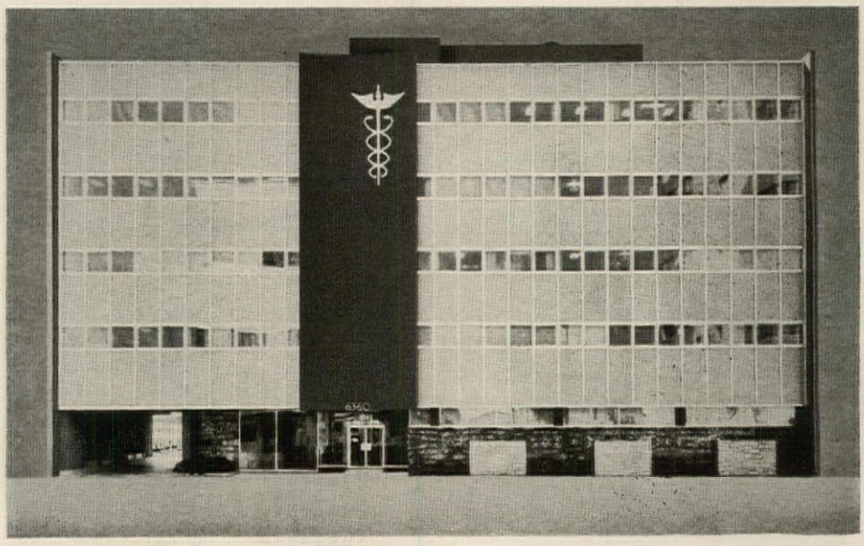
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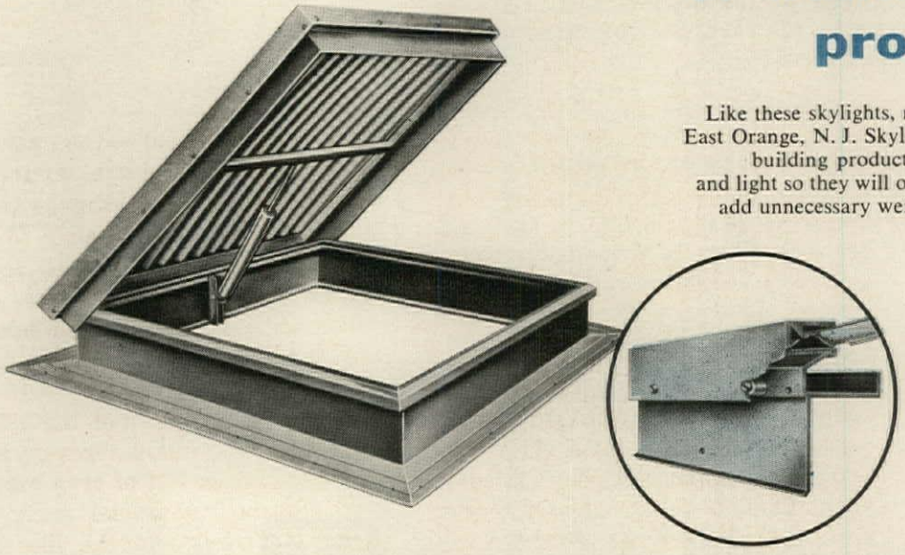
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## or building products...

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Editorial

# Our "surplus" land

Every so often, things "everybody knows" need to be re-examined. For instance everybody, including City Hall, knows the place to look for plentiful building land is not in the asphalt and brick burdened city. Everybody knows the place to look for land is out in the country.

Is that so?

About five years from now, when we look back at the good old fifties, one of the things that may look good about them is the troublesome crop surpluses. It seems unbelievable (after all, the 1958 budget sets a record for farm subsidies), but at the rate construction is now gobbling countryside, population and tillable land will come into delicate balance in the early sixties. From that point on, the problem will be to hold on to enough farmland to feed an ever growing population, and eventually the problem may be how to increase farmland at the expense of buildings and pavement. It is not farfetched to imagine today's school children struggling in their maturity with legislation, subsidies and bids on rural redevelopment, so they can eat.

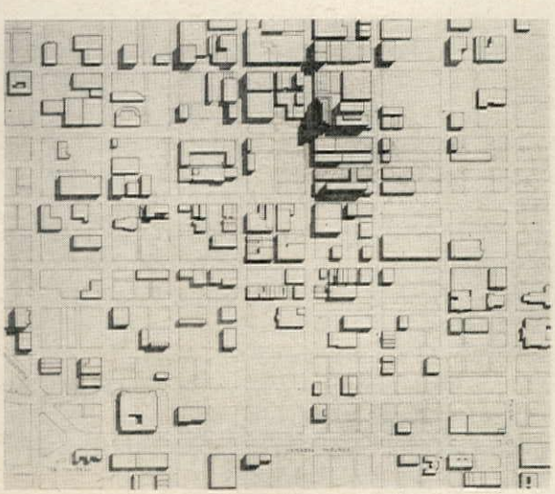
If this calendar for change sounds abrupt, remember the Sioux who only 85 years ago plucked their dinners at will from horizon-filling herds of buffalo "innumerable as the stars of the heavens"—then saw the herds reduced to virtual extinction in less than a decade, thanks to the railroad. Things can change fast in this country, especially, it seems, when wheels carry the change.

The scale at which open land is now vanishing, thanks to the automobile, compares in scale with the vast buffalo slaughter of the 1870's. Each year 1.1 million acres by present estimates go out of crop use and into suburbs, industrial sites, airports, highways and the like. The bite promises to grow bigger year by year, not smaller (see "Land: a new kind of boom," AF, Feb. '57). For instance, the new federal highway program alone will put pavement over 1 million acres in the next decade. Representative Clair Engel of California—a state where the unequal contest between the artichoke and the bulldozer is especially vivid—has delved into the landholdings of the military and come up with the report that its present holdings would constitute a strip 14½ mi. wide from San Francisco to New York. "If they got everything they are asking for now," he says, "that strip would be increased to 18½ mi. wide."

Everybody is using land and more land, as if the reservoir of open land were inexhaustible. When the day of

reckoning with our stomachs arrives, we shall have to cast about for some new reservoir of building sites. It is already waiting, in the place where it is "self evident" that land is the one thing in short supply—in the cities.

Very few cities have made inventory of their land reservoirs. The few that have demonstrate that the slums are a drop in the bucket, for much of the urban land reservoir is not residential at all. Much is cast off and semi-abandoned industrial; much is underused commercial; much is interstitial land which never was developed or which now stands derelict and empty. Even in inner city cores, supposedly the most intensively used areas on the map, pools of surplus and underused land abound. In replanning the one-square-mile downtown of Fort Worth (AF, May '56), Architect Victor Gruen found the underused or derelict reservoir was large enough to provide space for a belt highway, parking garages for 60,000 cars, green belts, a 300% increase in retail area, 60% increase in office space, 80% in hotel space, and new civic, cultural and convention centers. Fort Worth is not a special case. Architects Garber, Tweddel & Wheeler, as consultants to the Cincinnati City Planning Commission, have surveyed Cincinnati's core, and left its underused or derelict portions blank on the map below. This is not a map of downtown outskirts; this is *downtown.*



Hints of the relative plentifulness of city land can already be read in prices (see p. 134) and in ratio of land costs to total costs. Land costs are now running less than 17% of total cost for building on the most coveted sites in midtown New York —compared with an average of 20% for suburban residential building.

City halls which have been thinking of renewal problems and opportunities only in terms of slum clearance and residential redevelopment should wake up to the fact that they have unrealized quantities of a most basic commodity which is inexorably going to be in short supply elsewhere, and they should begin to do some hard and creative thinking about it.

The half-trillion dollars which will be spent on construction in the next ten years needs land, and as much of it as possible must be land which will do our future food supplies and recreational possibilities least harm. The first step is to realize that unlimited land is not where we think it is, but that a wealth of it lies almost unnoticed where we think it isn't.

## Teaching vs. practice

Columbia University has a school of architecture with a housing and planning division in it, and Columbia also has a triple building program involving architecture, housing and planning. Until a couple of months ago she carried the school and the program in separate pockets. Then capable Architect Frederick Woodbridge, who frequently acts as visiting critic at the school, was appointed chairman of an architectural coordinating committee. He asked the half dozen or more firms of architects with a dozen or more buildings in their charge (all under separate contracts) to bring along drawings or models of their proposed schemes to a first meeting, to show what progress all were making.

According to information which leaked from the meeting, confusion was quite immense. Groans and laughter accompanied the discovery of one incongruity after another, as plans were unrolled for buildings that were intended to stand in close conjunction but had been worked out as if each were a military secret. Since then a great deal of solid progress has been made. Yet can Columbia ever, by these last-minute rescue techniques, regain the distinction conferred on the core of her campus by the late great Architect Charles Follen McKim, who was allowed to execute a coherent plan in which the total result exceeded the sum of the separate parts? Not yet—by last accounts —has Columbia programming been broadened to take in the separate building programs of Columbia's Barnard College and Teachers College directly adjacent to the university campus.

The separation of teaching and administration in our universities has its advantages, but never was it intended that the administration should *deny* the teaching. The cure lies mainly in the hands of the deans. When Harvard ignored its School of Design in its building program some years back, Dean Joseph Hudnut created an effective commotion and the situation was remedied. Is Dean Leopold Arnaud of Columbia's School of Architecture capable of raising an effective commotion? Now is his chance. If architectural schools don't lead in getting architecture accepted, who will?

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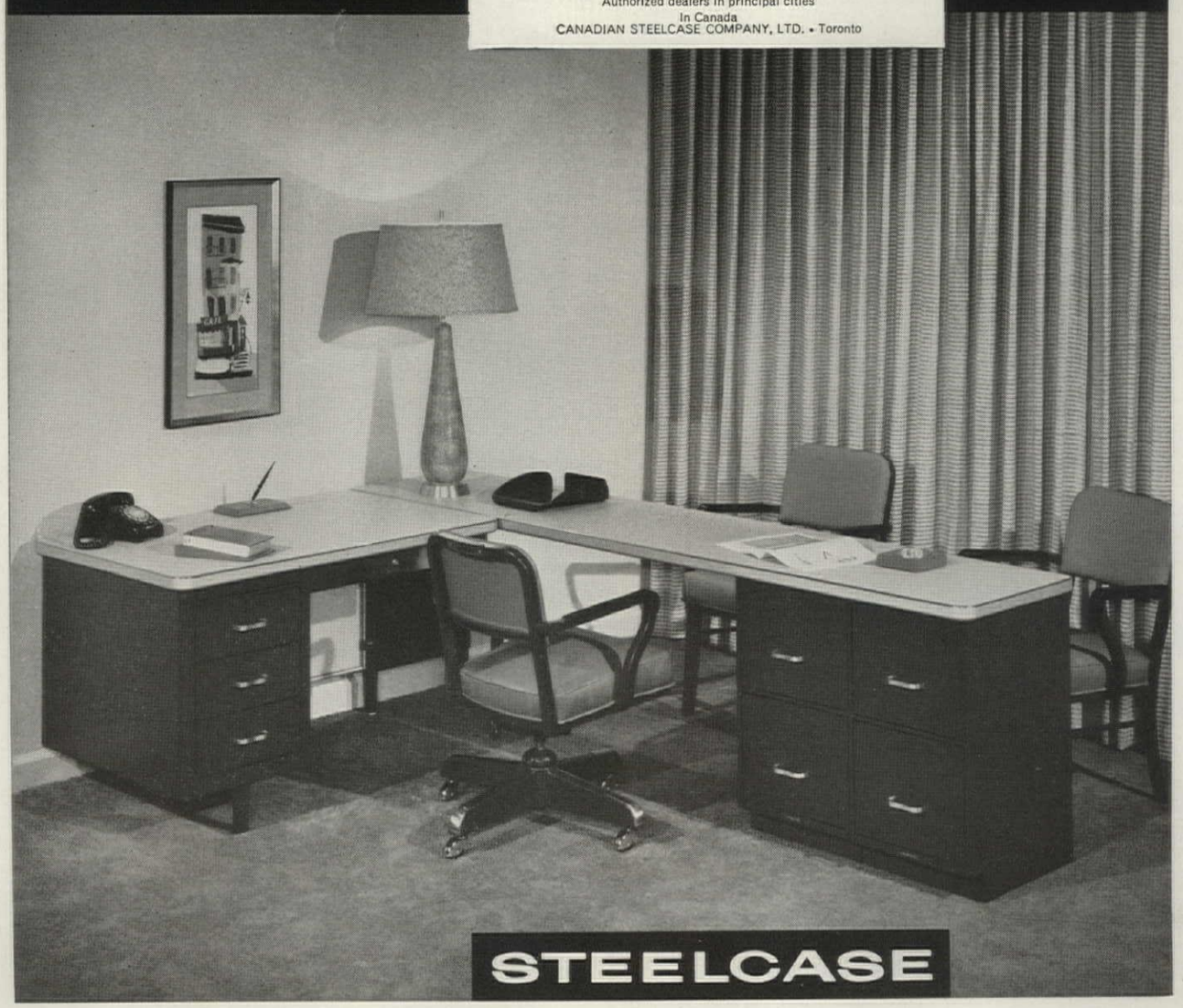



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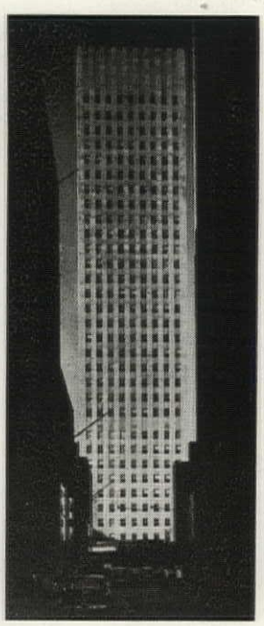
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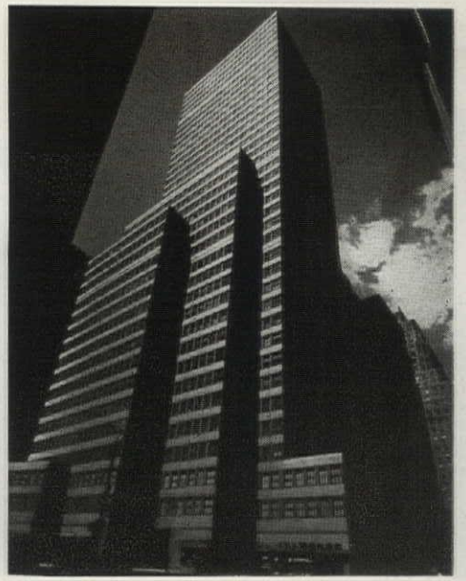
1947
445 PARK AVE.
Kahn & Jacobs, *arch.*



1947
ESSO
Carson & Lundin, *arch.*
Wallace K. Harrison, *consulting*



1949
ARABIAN-AMERICAN OIL
Emery Roth & Sons, *arch.*



1950
1407 BROADWAY
Kahn & Jacobs, *arch.*

**It has a logic of its own in which business at lunch, the poor spelling of secretaries, and the efficiency of a brisk stroll account for 116 new buildings on a congested island**

# New York's office boom

by JANE JACOBS

In Chicago, Philadelphia, Houston, Cleveland or Atlanta, a new office tower is news. But in New York, with 64 postwar office buildings already up, 20 under construction and the white X's of impending doom on the windows of one middle-aged landmark after another, an ordinary 30-story tower makes about as much stir as any routine birth announcement.

What is happening in New York is less an expansion than an explosion of office space. The 40 million sq. ft. added or about to be added represents more than a 40% increase of the city's office space at the war's end. The increase alone represents more office space than the total in any other US city. Or, put another way, it equals all the new office building in all the rest of the country put together and then half as much again. And every rentable square foot of it is air conditioned, for this is expensive space, renting mostly for $5 to $6.50 per sq. ft. (with a little as low as $4, considerable at $7 and a little at $8 or more).

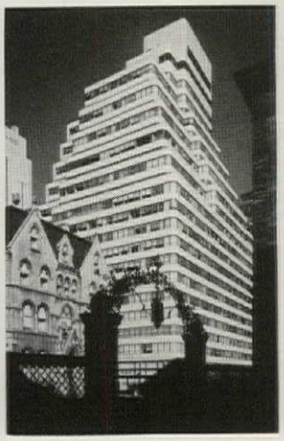
It is misleading to think of this fantastic absorption of expensive space as a "New York" boom, for although the boom is geographically localized in Manhattan, this is really the "US" office building boom, or most of it. It can be understood only in those terms. In some cases the national—or international—source of demand for new space is instantly obvious: three representative examples within a few blocks on Park Ave. are the Arabian-American Oil Co. building, whose chief tenant moved in from the West Coast; Lever House, whose occupant moved headquarters in from New England; the Colgate-Palmolive building, whose namesake ferried across the river from Jersey City. But even when the new space is snapped up by old inhabitants of the city—as it is in most cases—the demand directly reflects national growth in machine tools installed, stockings sold, ore veins tapped, money lent, pills swallowed.

But if the size of the office boom

**Along Park Ave.,** offices are replacing apartments; Lever House at left, Seagram's at right foreground, Astor Plaza site at center; at least five others in view.



1950
575 MADISON AVE.
Emery Roth & Sons, *arch.*



1950
LOOK
Emery Roth & Sons, *arch.*



1950
100 PARK AVE.
Kahn & Jacobs, *arch.*



1951
SINCLAIR OIL
Carson & Lundin, *arch.*



1951
LEVER HOUSE
Skidmore, Owings & Merrill, *arch.*

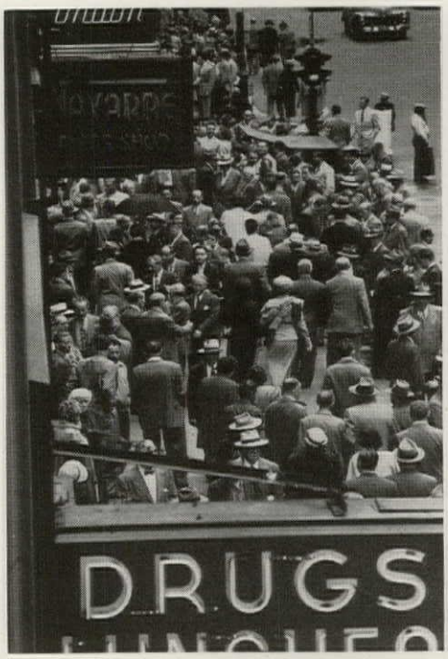
is plausible, considering the national production boom it services, the dizzying form it has taken still requires explanation. The curiosity is not that so many new policy, paperwork and palaver hives should be needed, but that they should concentrate, as they have, in the two most chokingly congested portions of Manhattan Island (see map, p. 107).

What has happened to those sensible-sounding postwar catchwords, "dispersal" and "decentralization?" What has happened to the vision of the happy file clerks eating sandwiches on the grass far from the madding crowd? What has happened to the hankering for big, horizontal, flexible spaces? What has happened to the theory that modern magical communication makes constant shoulder-rubbing unnecessary? Or the theory that congestion was already strangling this kind of wild city-core growth?

Some companies with New York headquarters, such as General Foods, acted on these concepts, but they are rare exceptions. Many more, like Union Carbide, planned to act on them, then took second thought after a second look. The logic of dispersal, even within Manhattan, has been ignominiously vanquished by such earthy matters as the value of the shrug and the peek, the businessmen's lunch, the secretaries' lunch-hour shopping, the low depression birthrate and the traffic jams—all of which may be summed up under "confrontation," "personnel pickiness" and "pedestrian proximity." The first has dictated against dispersal to the suburbs, the second two against dispersal within the city. All three represent forces metropolitan planners must reckon with and must probably accept and plan for, however unreasonable they may seem.

What the sociologists call "confrontation," real estate men call "linkages," and most of us call "seeing the people I have to see," is the reason so much national corporation management is in Manhattan at all. It simply means that person-to-person (even with video added) is no substitute for face-to-face, for the peek at figures not to be broadcast, the shared Martini, the subtle sizing up, the chance to bring the full weight of personality to bear.

Most companies which planned postwar headquarters dispersal did take confrontation into account by assuming that top officers could and should remain in Manhattan towers,




**Face-to-face business** and gossip, famous phenomenon of garment district sidewalks, is just as important although more cloistered on Park Ave.; on this need Manhattan's office supremacy rests.





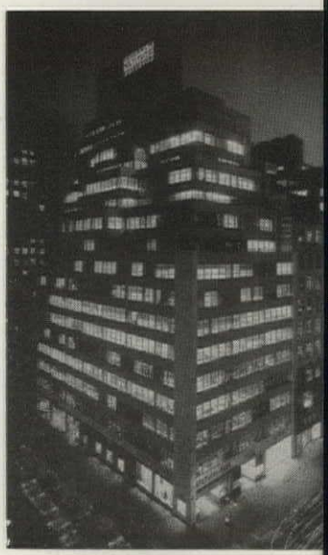
1952
260 MADISON AVE.
Sylvan Bien, *arch.*



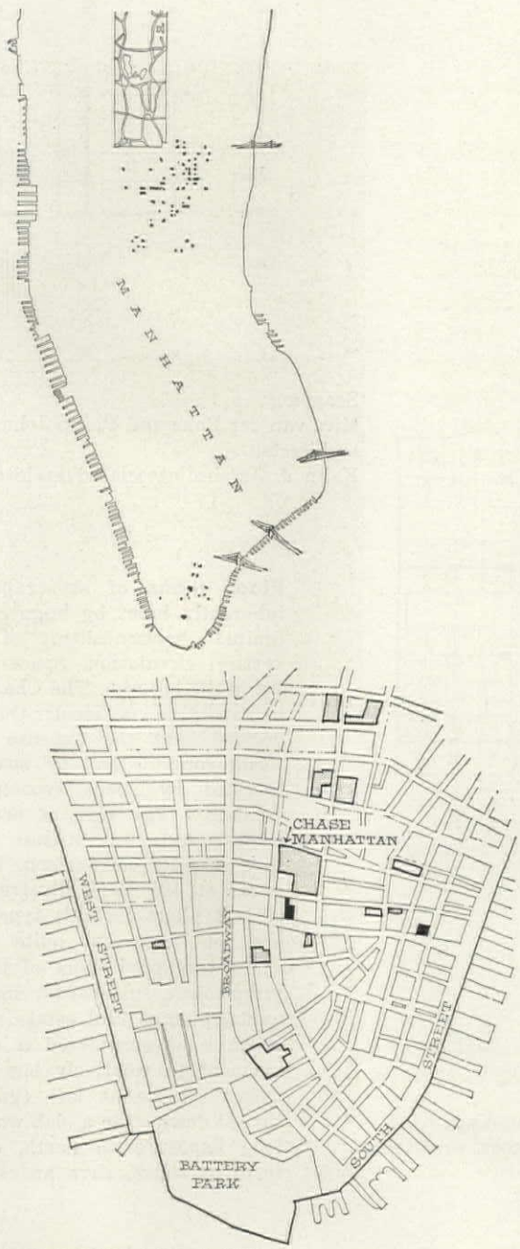
1953
380 MADISON AVE.
Emery Roth & Sons, *arch.*

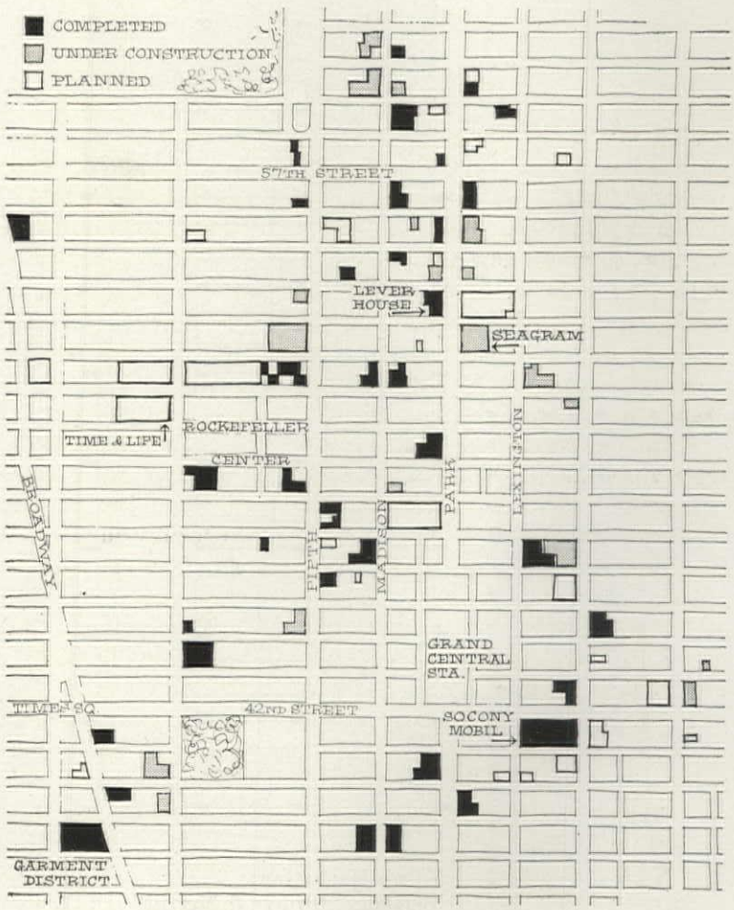


1954
99 PARK AVE.
Emery Roth & Sons, *arch.*



1954
589 FIFTH AVE.
Emery Roth & Sons, *arch.*

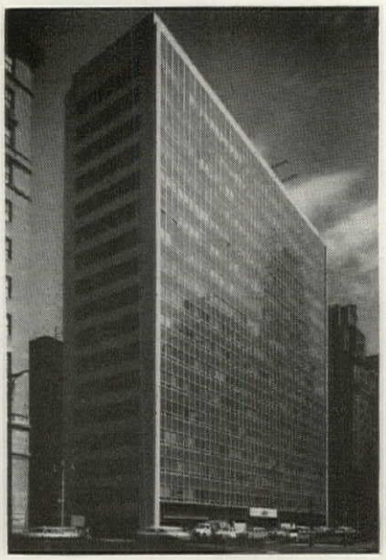



**Maps** show distribution of new and planned buildings which cluster in already intensively used midtown and financial areas. Based on data from New York Real Estate Board and James Felt & Co.



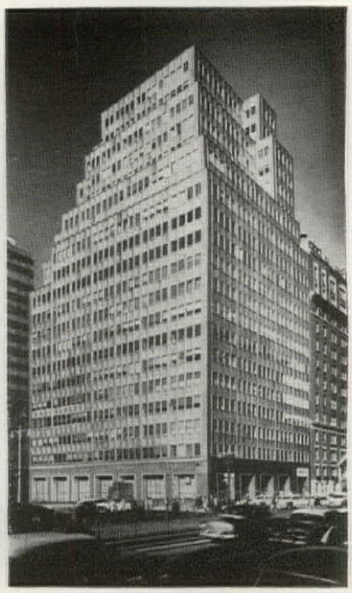
1954
**261 MADISON AVE.**
Sylvan Bien, *arch.*



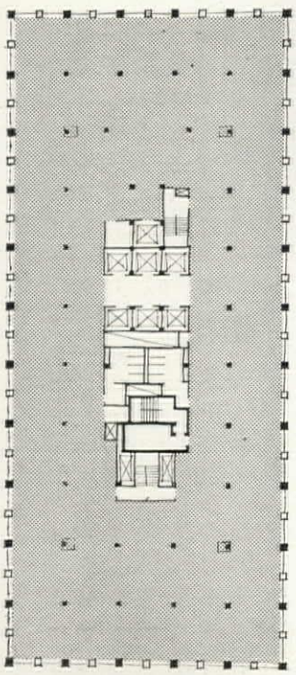
1954
**430 PARK AVE.**
Emery Roth & Sons, *arch.*



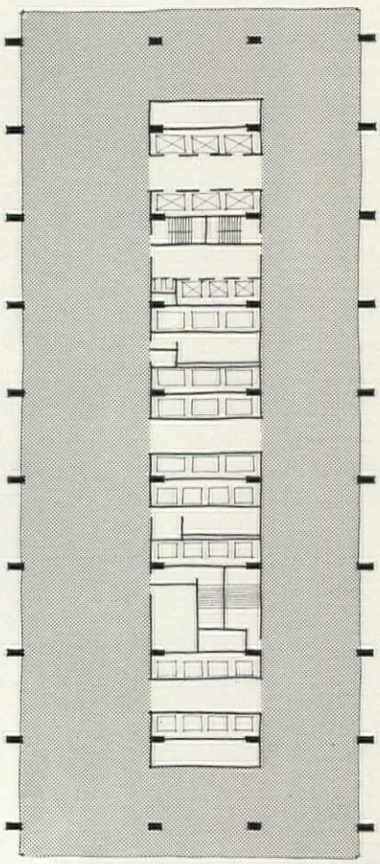
1955
**1430 BROADWAY**
Emery Roth & Sons, *arch.*



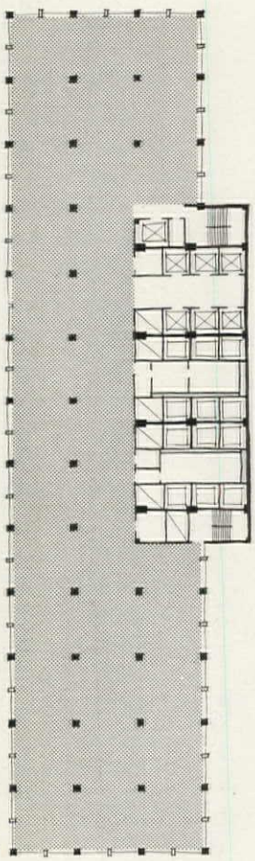
1955
**460 PARK AVE.**
Emery Roth & Sons, *arch.*



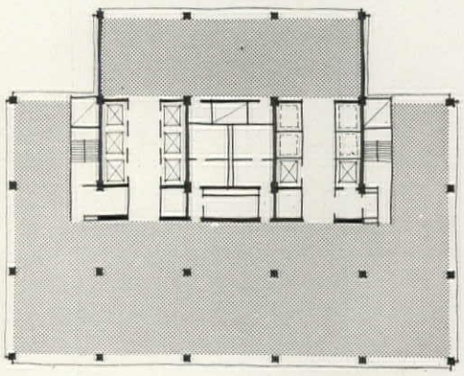
666 Fifth Ave.:
Carson & Lundin, architects



Chase-Manhattan:
Skidmore, Owings & Merrill,
architects

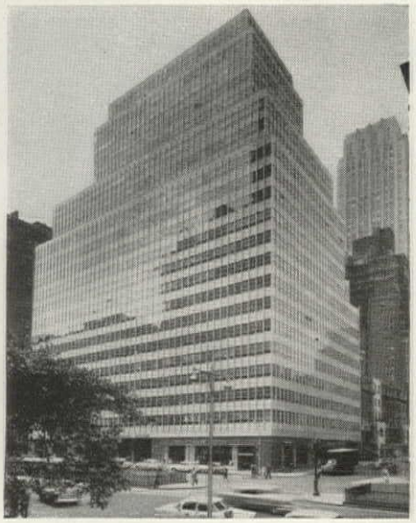


Proposed building:
Kahn & Jacobs, architects



Seagram:
Mies van der Rohe and Philip Johnson,
architects,
Kahn & Jacobs, associated architects

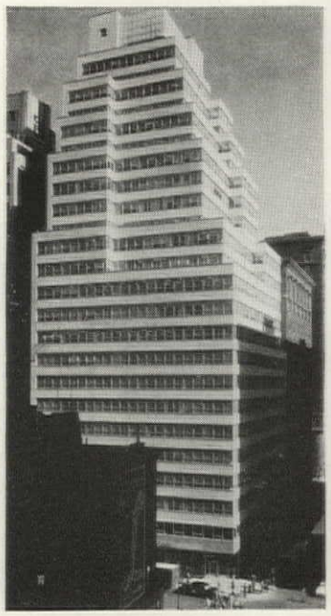
**Floor plans** of skyscrapers are inherently beset by huge columns, limited horizontality, exorbitant vertical circulation. Space flexibility is the big aim. The Chase Manhattan plan is ideal; the client decided that the expense of exterior columns and 40′ spans was justified by space economy and flexibility. The plan of 666 Fifth shows good conventional central-core plan for comparison. The ziggurat at 425 Park illustrates one of best plans for this type; floors are not large, but quite flexible. The interrupted space of the Seagram tower, suitable for small tenants, puzzles real estate men because it is considered a discouragement to relatively big leasers. Offset scheme at left (good, but turned down) for a slab would put long exposure on north, cut out third of south, save an estimated



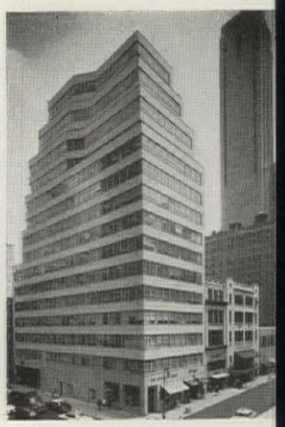
1955
COLGATE-PALMOLIVE
Emery Roth & Sons, *arch.*



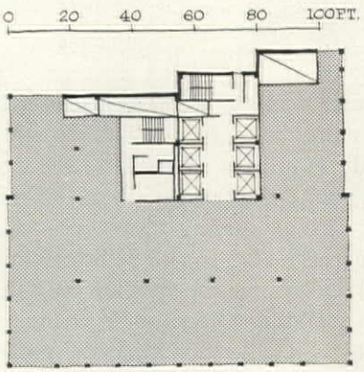
1955
AMOCO
Emery Roth & Sons, *arch.*



1956
415 MADISON AVE.
Emery Roth & Sons, *arch.*



1956
545 MADISON AVE.
Emery Roth & Sons, *arch.*




425 Park Ave.:
Kahn & Jacobs, architects

$250,000 on air conditioning because of this deference to the sun.

Major interior advances in new buildings are electronically controlled elevators, reducing shafts from one per 30,000 rentable sq. ft. to one per 40,000; and air conditioning, which also means hung ceilings and, usually, integrated lighting. Floor-to-floor heights are no greater than prewar, often less; finished heights are much less, typically 8′-4″ to 9′-6″ (one cut it down to a miserable 7′-6″). Architects Kahn & Jacobs report a "hidden" cost of heavy cooling load from full glazing: because of larger ducts, finished heights lose 6″ more or, alternatively, an extra 6″ per floor must be added to total cubage.

Building costs now range from $20 per sq. ft. for the air-conditioned shell to more than $50.

but they reasoned that the troops could well move to the suburbs. A real estate broker with several such clients relates the typical outcome: "When they get off the theory and down to cases, they find they need the comptroller around, and he can't get along without his head accountants and supervisors, and they need the people doing the day-to-day work, and those people need them. So it goes with department after department. What you have left over is a few odd operations that wouldn't be missed. Linkages operate across company lines and in the company all the way through headquarters."

**The depression babies**

A low birth rate is not normally considered any boon to construction, but in the case of this office boom, the decade of depression births has been a powerful spur to new building, expensive building and, above all, to concentrated building. New blood—currently aged 17 to 25—is in acute short supply, a state that became uncomfortably noticeable to personnel departments in 1952 and is expected to continue until 1960. And of new workers available, mighty few can spell, which makes the actual shortage even more acute than the apparent shortage. The recruiting rivalries among companies on June campuses now have their counterpart all year in the employment agencies and personnel departments of Manhattan. Air conditioning, "glamor," adjacent shops and lots of them, and location in the throbbing center of things have proved potent fringe benefits. Employment agencies document case after case of successfully servicing companies with new offices in central locations, and simultaneous inability to make a dent in the vacancy backlog of counterpart companies in old space or out-of-the-way spots. This has actually been the decisive factor in many decisions on when to move and, above all, on where not to move. It has been the clincher against the suburbs and against the edges of the island. "We might as well shut down this department if we move out of midtown," says a personnel head, and he means it. "When we get the first company in an industry, we soon get the rest," reports a gleeful real estate man. "Take the metals people. If one of them moves into the right spot it gets everybody who can spell molybdenum; the rest have to follow."



1956
625 MADISON AVE.
Sylvan & Robert L. Bien, *arch.*



1956
**711 THIRD AVE.**
William Lescaze, *arch.*



1956
SOCONY MOBIL
Harrison & Abramovitz, *arch.*
**John B. Peterkin, *assoc. arch.***



1957
20 BROAD ST.
Kahn & Jacobs, and
Sydney Goldstone, *arch.*

Then there is the well-circulated anecdote of the marine insurance company president who could not see the sense of taking new, expensive space until he toured a rival company's proud new quarters—and bumped into his own secretary awaiting a personnel interview. This may be myth, but the situation it epitomizes is not.

When Chase Manhattan Bank announced plans for its "little Rockefeller Center" in the downtown financial district, it gave a powerful spur to new office planning in the whole area. One big reason is that the Chase plans inject that powerful, personnel-pulling glamor, an ingredient which, as any employment agency will verify, has become desperately needed downtown.

### The homemade pedestrian island

Manhattan's fearsome midtown traffic jams should be, in all logic, an argument for spreading out. Quite the contrary, in practice. The more frustrating it has become to ride around the city, the greater has become the necessity for those doing business together to be cheek-by-jowl. For instance, office headquarters of the textile houses were for years behind the delightful cast-iron fronts of Worth St., a quaint and relatively quiet backwater in lower Manhattan. Within the past four years virtually this entire "district" has moved into new towers in the most insanely congested area of Manhattan, the garment district—because here the companies can be within walking distance of their in-town customers and the hotels and haunts of out-of-town buyers.

The words "walking distance" are the key. The towers of this boom have been progressively reaching higher, but not because of land costs, the classical determinant of building height. Office land costs are now running, with few and freakish exceptions, a sixth or less of total cost, although a fourth of total cost is considered sound, conservative rule-of-thumb. The towers are taller for the simple reason that the effective demand for space is in the big heap, within walking distance of other big heaps.

The difference in carrying charges between a $4 million site in outlying midtown and a smaller $8 million site at the heart of things, a whopping $400,000 per year, has been discounted by one big corporation as not recompensing it, under present traffic conditions, for taxi fares and loss of employee time in seeing people who need to be seen. (The saving looks penny-wise, pound-foolish in relation to the $4.8 million annual carrying charges on a $40 million building in either location.)

So thus far, office district congestion is not visibly sowing the seeds of its own destruction, as reason says it should be. It is visibly sowing seeds of proliferation. The most striking result, and perhaps the most significant, is that without planning or policy—based on nothing but pragmatic, separate decisions by thousands of tenants—office-Manhattan is sorting out, consolidating and densely populating, five pedestrian "islands." These include four established districts and one new one: The financial district, the garment area fringe, the Grand Central area, the Rockefeller Center–Madison Ave. area, and the new Park Ave. district, formerly apartments, which merges into Grand Central and Madison Ave. People on business or personal errands within each of these districts, or over to an adjacent one, normally walk, and that primitive convenience is a major ingredient of the areas' in-



1957
425 PARK AVE.
Kahn & Jacobs, *arch.*



1957
400 PARK AVE.
Emery Roth & Sons, *arch.*



1957
C.I.T.
Harrison & Abramovitz, *arch.*



1957
666 FIFTH AVE.
Carson & Lundin, *arch.*



1957
SEAGRAM
Mies van der Rohe
and Philip Johnson, *arch.*
Kahn & Jacobs, *assoc. arch.*

tense popularity with both boss and employee.

**State of the boom**

The first building of the boom, the Tishmans' 21-story tiered block at Park and 57th (a prophetic location), went up in 1947. For the next several years the boom, hardly yet recognizable, grew timidly and tentatively, rather like a letting out of seams than a creation of a whole additional wardrobe.

Since 1954 there has been no mistaking the gathering momentum. And not only are more buildings going up and more going into planning now than at any previous time, but they are rapidly becoming larger. Those already completed contain, on the average, 280,000 sq. ft. of rentable area. Those in plan contain, on the average, 500,000 sq. ft., and the largest among them, the 1.5 million sq. ft.-and-up whoppers, are the firmest projects.*

Traditionally, the crescendo stage of office building has heralded a depression, an observation closely documented by Real Estate Analyst Roy Wenzlick. For office construction is customarily the johnny-comelately of a general boom, building up behind house and industrial construction. In the past, just about the time the office builders put their necks out, the ax fell. But the ax is already six years overdue, according to Wenzlick's charts of past business cycles.

Thus far, the old office space released by new building is being quickly absorbed by growing, overcrowded tenants. The vacancy rate sticks below 2%. But certainly there is a limit, some time, to the new space that can be absorbed.

When the limit is reached, whether abruptly or gradually, the result this time cannot repeat the office-building foreclosure debacle of the thirties because of the basic difference in financing methods. In the twenties, office buildings were financed by sale of bonds and the only limit to building was the caution—not very operative—of bond buyers. In this boom, the office buildings are financed by insurance companies, and their mortgage commitments do not become effective unless and until about 75% of space is signed for in advance by financially responsible tenants on long leases. The limit to building is leasing. When the demand slows up or stops, there will be a drastic effect on plans, rather than on buildings newly up or under construction. There is no guarantee this will not occur before expansion now in plan is all translated into leased and firmly financed projects, but those who are gambling time and planning money are betting on a total space increase of about 50% (10% beyond current plans) before a halt.

**Esthetic assessment**

Esthetically, this boom is pretty much a bust. It does promise a total of a half dozen or so stars and another two or three creditable performances, but the dominant effect is the ubiquitous, depressing mediocrity of the supporting cast. Block upon block of the new buildings are as like one another and as fundamentally boorish as block upon block of tenement building—just blander. We may have had uglier periods of city building, but never duller.

Three main faults are evident. First, simple industrial materials with regular industrial rhythms

* Breakdown of space figures: 24 million sq. ft. in 84 structures complete or building; another 16 million in 32 buildings planned to go into construction this year or next. Figures based on compilations by the Real Estate Board of New York.



1957
CANADA HOUSE
Eggers & Higgins, *arch.*



1957
405 PARK AVE.
Herbert Tannenbaum, *arch.*



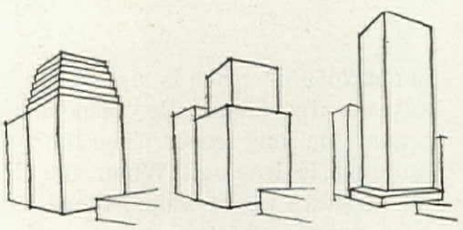
1958
575 LEXINGTON AVE.
Sylvan & Robert L. Bien, *arch.*



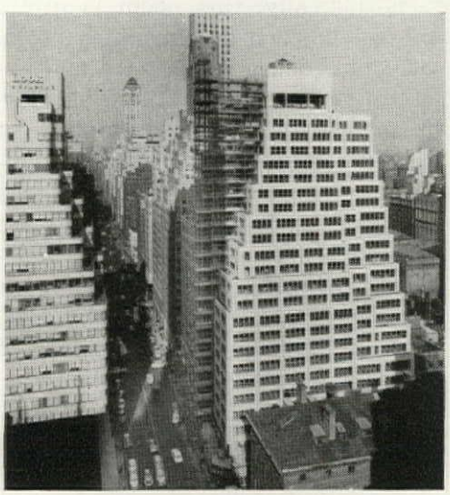
1958
CORNING GLASS
Harrison & Abramovitz, *arch.*



1959
45 WALL ST.
Voorhees, Walker, Smith & Smith, *arch.*



**Zoning** by rigid, awkward ziggurat formula now determines design. Even that excrescence, the "baby skyscraper" on 100′ x 100′ plot could benefit from overhaul, as indicated in sketches by Architect William Ballard, one of authors of 1947 rezoning study. Second two sketches show bulk "averaged out" under proposed rules; scheme at right, one of many possibilities, sets back 20′ on two sides, above first floor, goes up 23 stories. Gross floor area of 6,400 sq. ft. (net 5,500) as here would be about economic minimum for tower.

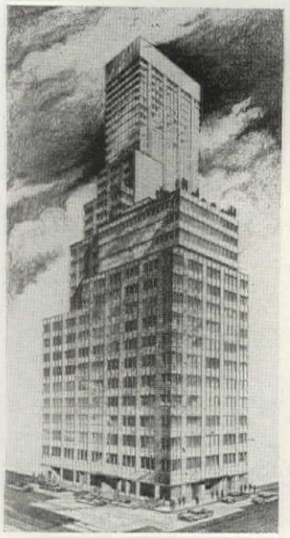


can, when used with great care and subtlety, give us Lever Houses and U.N. Secretariats; but seized upon by simple minds, these ingredients produce plain lack of character and retreat from design responsibility. The second trouble is New York's 1917 ziggurat or cake-mold zoning formula; combined with simple-minded modern this yields a city-scape that appears to have been wallpapered over bumps. The third evil is the way these products—and some of the better ones too—are slapped along a seventeenth-century street pattern with which they are out of scale, in the usual pre-Rockefeller Center fashion, but minus even the small deferences to scale which past fashions permitted. Is this progress?

As for solutions: any to overcome simple-mindedness can begin only with general recognition by office building designers, and by their clients, that it takes the hardest kind of work (and adequate fees) to handle simple materials and modules with grace and interest, especially when they are used in such formidable quantities. Those who cannot do it should not aim for such simple effects as they do.

The ziggurat code is fortunately not immutable; the Building Congress is now pushing for replacement of the outmoded formulas by more suave but equally effective methods of limiting bulk and protecting light, so that the kind of elegance attained by Lever House need not be inseparable from economic sportiveness. This improvement could also help solve the scale problem by not requiring the "baby skyscraper" to be shoved to plot line for 11 or 12 stories to achieve maximum permissible bulk. It would also allow blockwide buildings which give up ground space to build huskier towers. (Today open ground space is sacrificed space or is sometimes offset by complicated air-rights deals with neighbors.)

The few proud buildings of this boom already make it clear that a new and urgent problem in urban design accompanies beneficial opening up of ground space. The buildings with plazas are tending to nest together. Park Ave. and 53rd St. has the plaza of Lever House on one corner, the plaza of Seagram's under construction on a second, the plaza of Astor Plaza in plan for the third corner (see p. 113). The crossing of Sixth Ave. and 51st St. is to be bordered by the Time & Life,



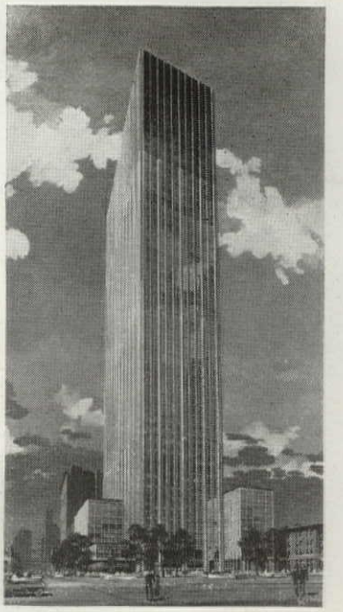
1959
80 WALL ST.
Lama, Proskauer & Prober, *arch.*



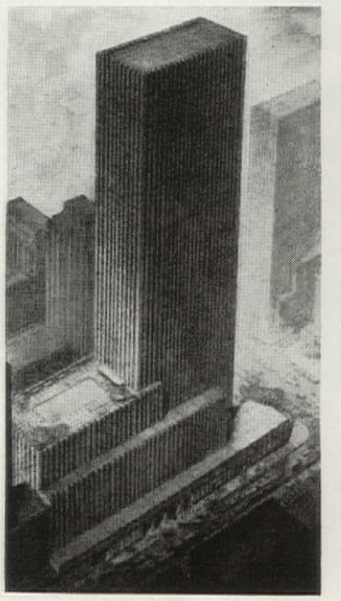
1959
ASTOR PLAZA
Carson & Lundin and,
Kahn & Jacobs, *assoc. arch.*



1959
CHASE-MANHATTAN
Skidmore, Owings & Merrill, *arch.*



1959
TIME & LIFE
Harrison & Abramovitz, *arch.*



1960
GALBREATH
Harrison & Abramovitz, *arch.*

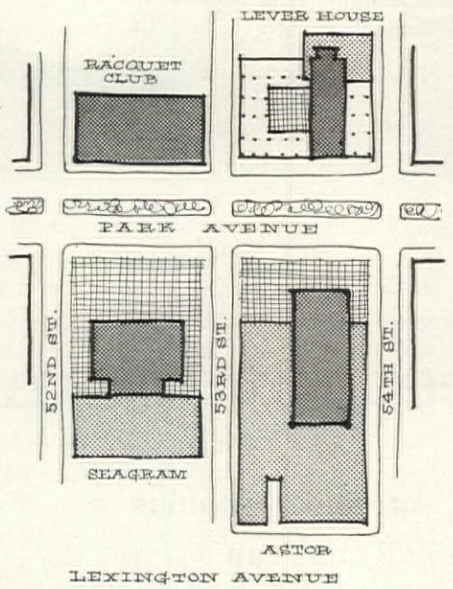


1960
UNION CARBIDE
Skidmore, Owings & Merrill, *arch.*

Galbreath and Equitable buildings, all with plazas to the corner.

No one such building can stand as an isolated gem with setting. If owner and architect follow habit in regarding it thus, instead of as a problem also in town planning, coincidental plazas can total up as happenstance, blobbed-together meanders. This kind of problem cannot be solved very well by municipal regulation; deft application of governmental design rules is no American characteristic. It can be solved by behind-the-scenes mutual negotiations and suggestions among the developers and their architects. It is only elementary sense that this should be tried, whether an existing plaza is being affected by a new one or whether adjoining plazas are being simultaneously planned.

With office buildings, pride does not go before a fall. Proud buildings in proud context are proved as solid, durable investments. But the only New York office building based on this premise is that undertaken by a few owner-occupant firms. Maybe it takes the sobering knowledge of a double stake—investment and residence both — to drive home the many-sided, enduring value of prideful building.




**Park Ave. and 53rd St.** corner shows new urban design problem: grouping of office building plazas. Astor Plaza cancels intended "retreating" effect of Seagram building but does pay respect with orderly line-up of building edge.

PHOTOS: WALTER DARAN; RICHARD DEAN; FELIX GILBERT; RAUL GONZALES—TIME; VICTOR JORGENSEN—FORTUNE; J. ALEX LANGLEY; JOSEPH W. MOLITOR; DON MORGAN; RALPH MORSE—LIFE; BEN SCHNALL; © EZRA STOLLER; ADOLPH STUDLY.

DAMORA

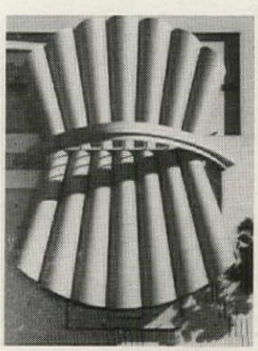
Auditorium lies independent beneath suspended scallop of concrete

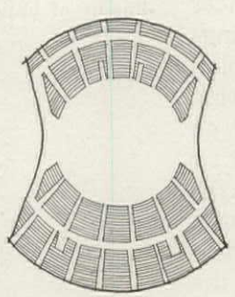
# Beethoven and basketball

For an exciting civic center, Architect Gropius has designed a multipurpose hall that can handle almost any community function

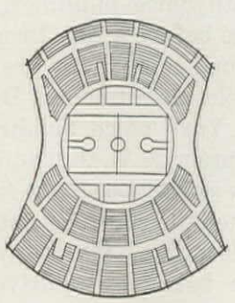
—By G. E. KIDDER SMITH

This lofty parabola and the roof of folded concrete suspended from it will give Tallahassee, Fla. a single hall to shelter all its public festivities and assemblies—a rarity for a town of only 38,000. From conventions to banquets, from chamber music to boxing matches, from

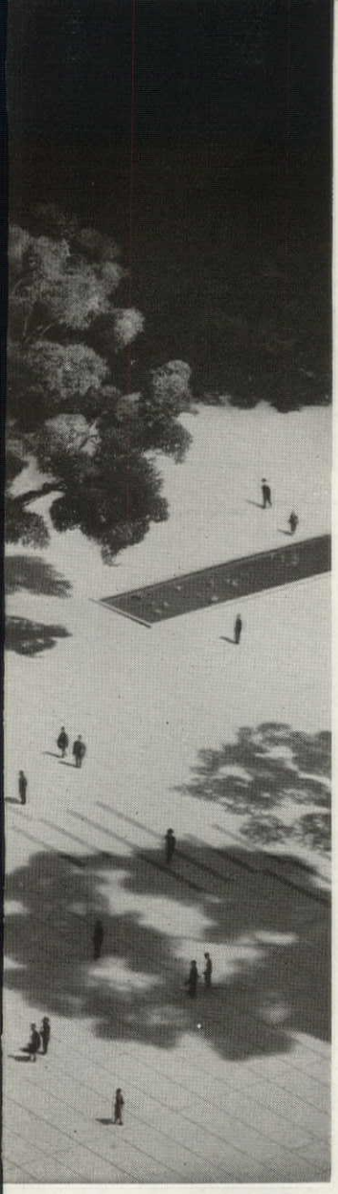


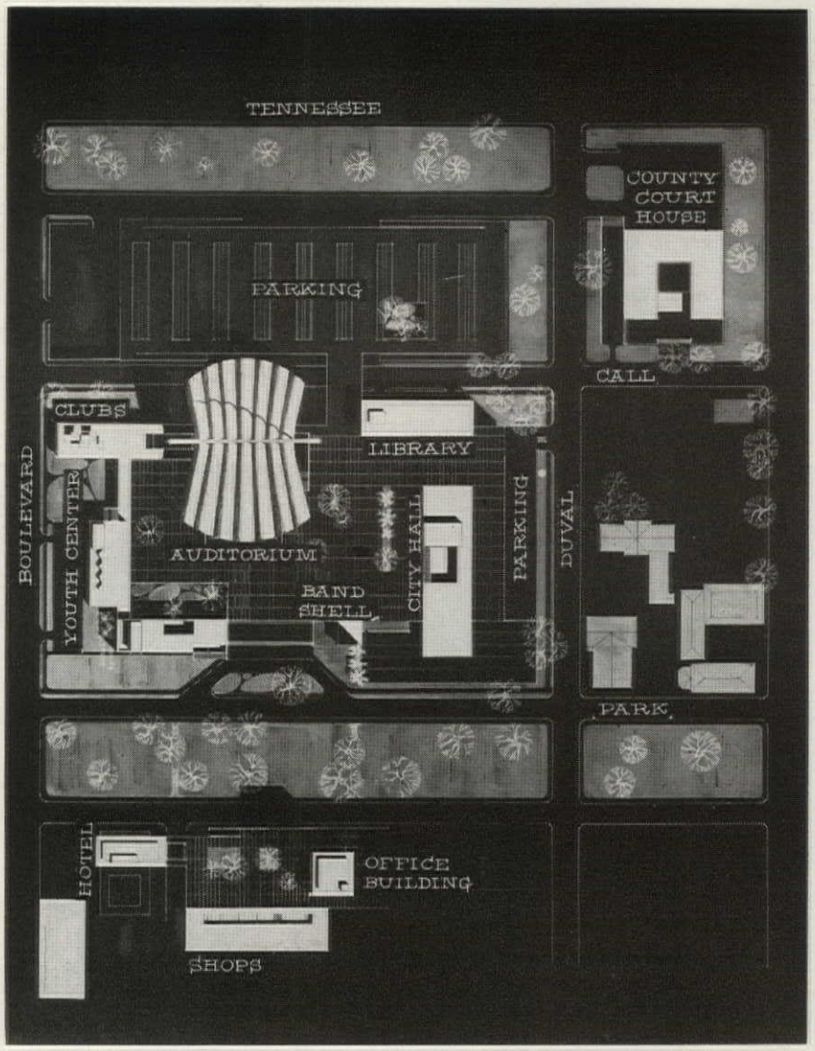


Exhibits, skating, 3,375 seats



Basketball, 3,711 seats



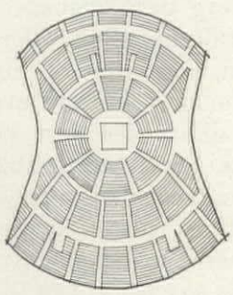



Site plan relates auditorium to other civic buildings and parking deck

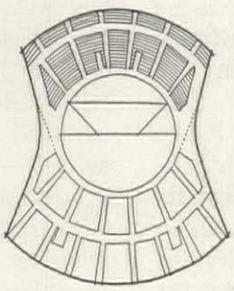
Little Theater to basketball—all will be sheltered by one exciting roof.

Under this accordion of concrete —a double scallop lightly hung from an arching bridge—rests the shallow bowl of a very flexible auditorium and, beneath it, a theater and various service elements. The separate costs of an exhibition hall, an assembly hall, a basketball gym, a theater and a concert hall would stagger even the largest cities, but by uniting all these functions into one multipurpose entity, Architect Walter Gropius and his associates at The Architects Collaborative (TAC) have come up with a solution which should fit into many communities.

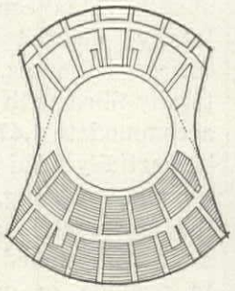
Although the auditorium alone was the generating force of the project, Gropius urged an expansion to encompass the rehabilitation of the site's depressed surroundings and to correlate this building with the city's other architectural needs. Thus, instead of one self-important building thoughtlessly lodged amid rampant commercialism and traffic, Tallahassee will have a civic center deployed about a tree- and lagoon-filled piazza. Tree preservation—the city boasts hundreds of superb old live oaks—has been for once an indispensable condition of design. The parking problem is logically solved by double deck shelters for



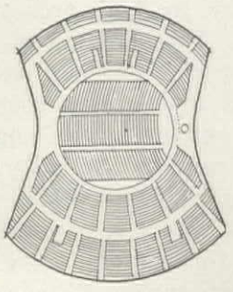
Boxing, 4,475 seats



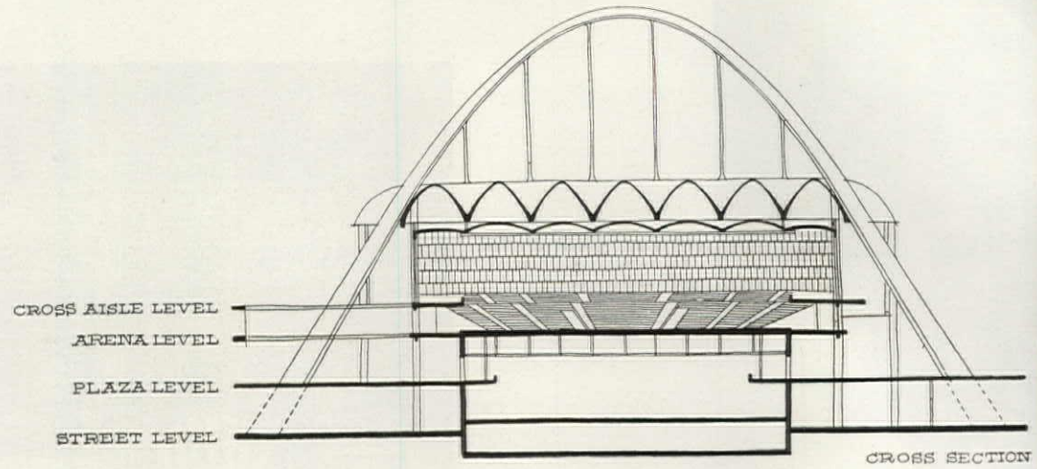
Small meeting, 1,200 seats



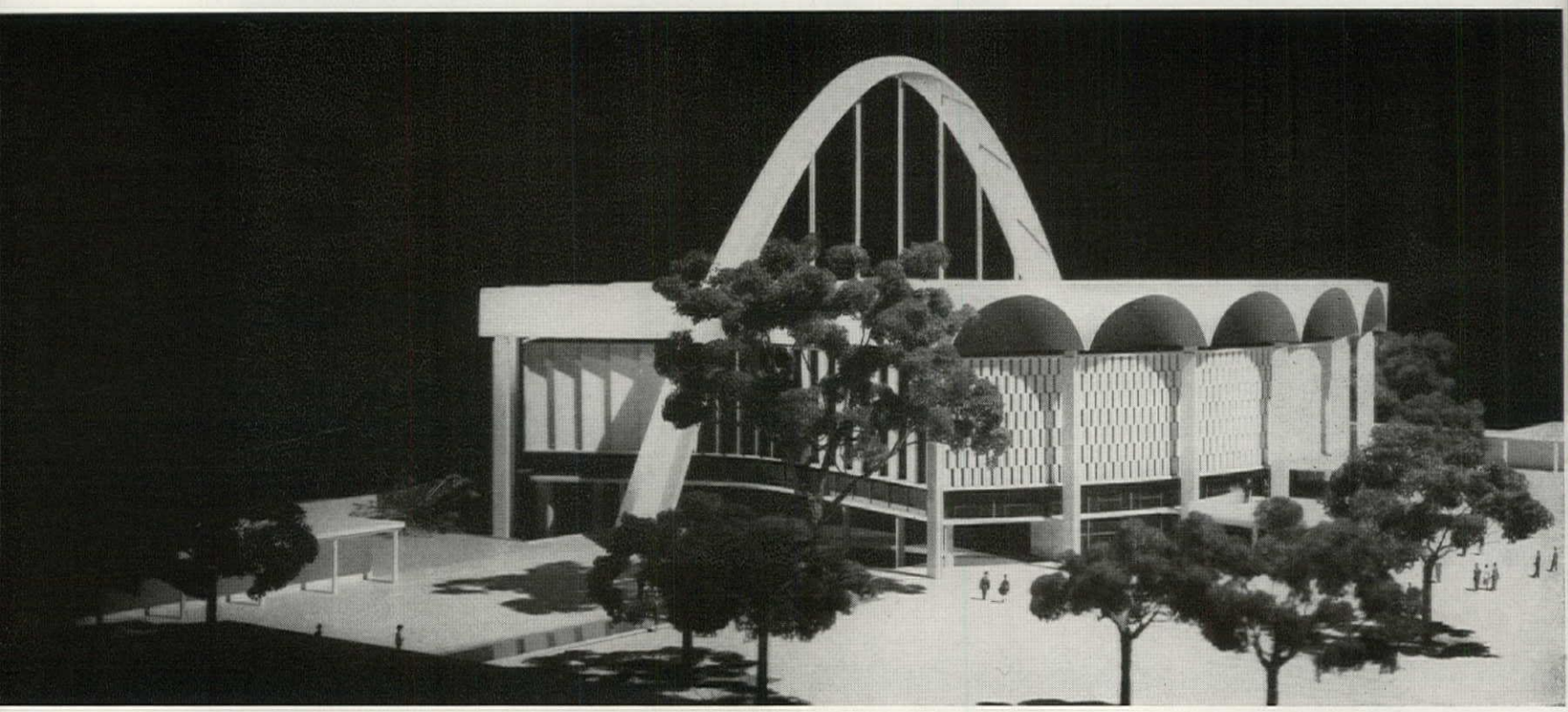
Middle-sized event, 2,175 seats



Large convention, 4,575 seats




**Roof structure** of auditorium, for which Engineer Paul Weidlinger is consultant, is revealed in cross-section (right). Model photograph (below) shows trees are very important element of plaza concept. This project is part of the concrete design program directed by Architect Robert Damora for Universal Atlas Cement Co.



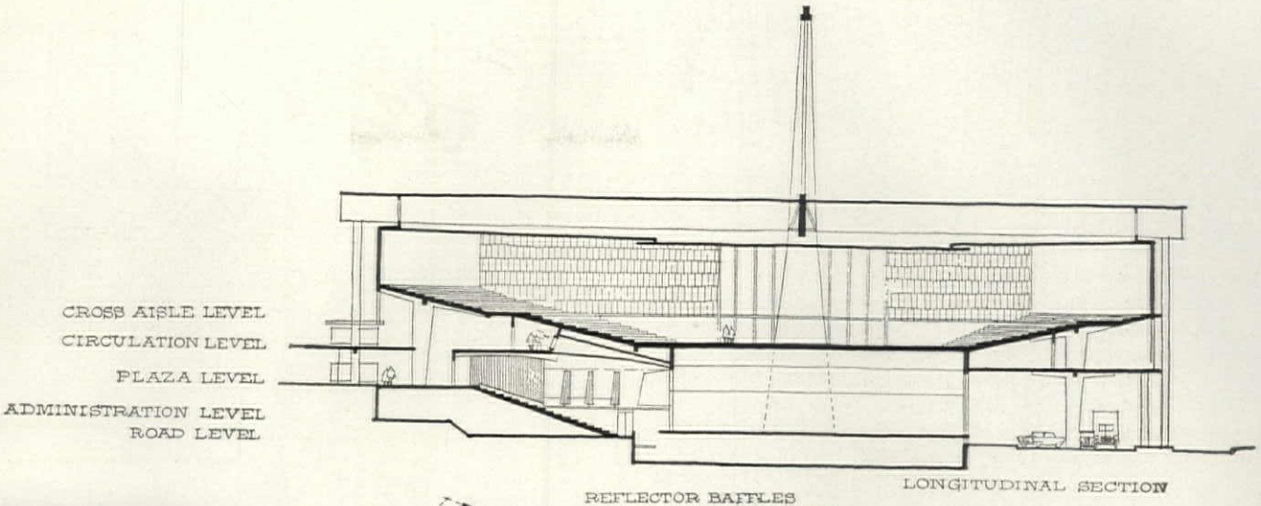
almost 1,000 cars. No cars will be found on the piazza: the pedestrian will be supreme.

As can be seen from the site plan on p. 115, the civic center is not made up of a half dozen units lining the periphery of a superblock. Instead it uses the total area available. Solid and void, horizontal and vertical, play of levels, buildings, trees, water and sky are all orchestrated together. The planning of the spaces between the buildings is as important as that of the rooms within.

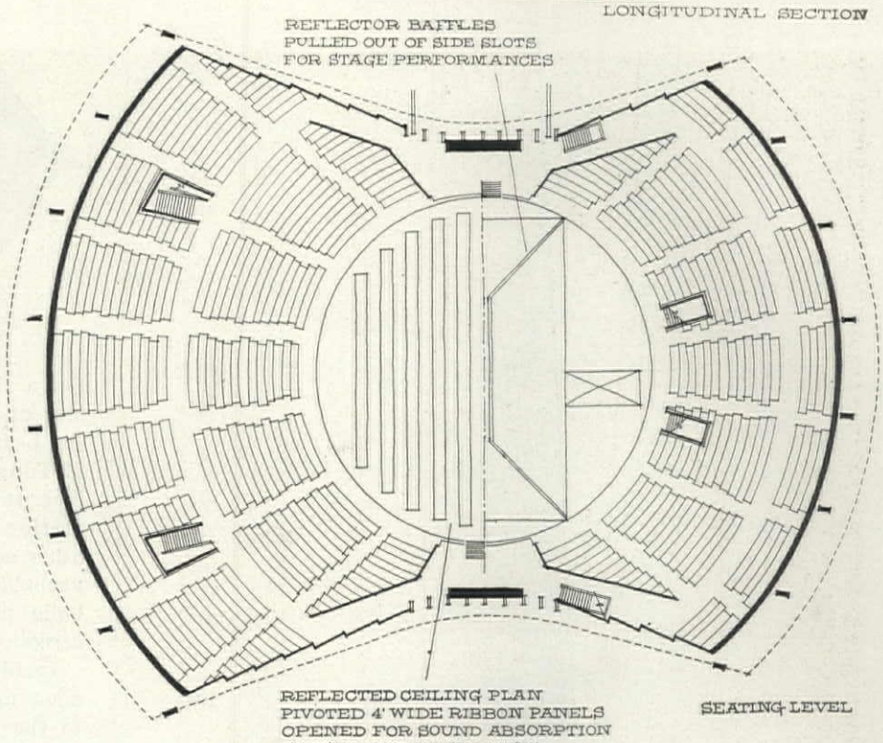
The suspended roof suggests that if one can readily make a self-supporting model in folded paper one can also make it in reinforced concrete, for the stiffening and buttressing problems of each are similar. The wasp waist of the auditorium derived not only from structural considerations but from the desire to place the maximum number of spectators on the "fifty-yard line." The circular center of the auditorium—the size of which was determined by a standard basketball court—is a highly flexible area surrounded by a shallow bank of 3,375 fixed seats. There are no columns at all. This central part can be totally cleared for exhibitions, dances, banquets, roller skating, or totally filled with seats. It can then accommodate 4,475. Or again it can be partially filled to provide for boxing and wrestling. For special events the asymmetric auditorium, which is air conditioned, can be subdivided to provide in one case seats for 2,175, and in the other 1,200. The most feasible means of effecting this subdivision are now under study. Acoustic considerations are no small part of this, for sound control must reconcile activities ranging from state basketball finals to a single speaker to a brass band. These demands are not only acoustically opposed but must be housed in changeable shapes, something which has not heretofore been managed. Acoustical Consultants Bolt, Beranek & Newman are now working with TAC on the problem and are satisfied these difficulties can be solved — perhaps with adjustable acoustical baffles (see plan, right).

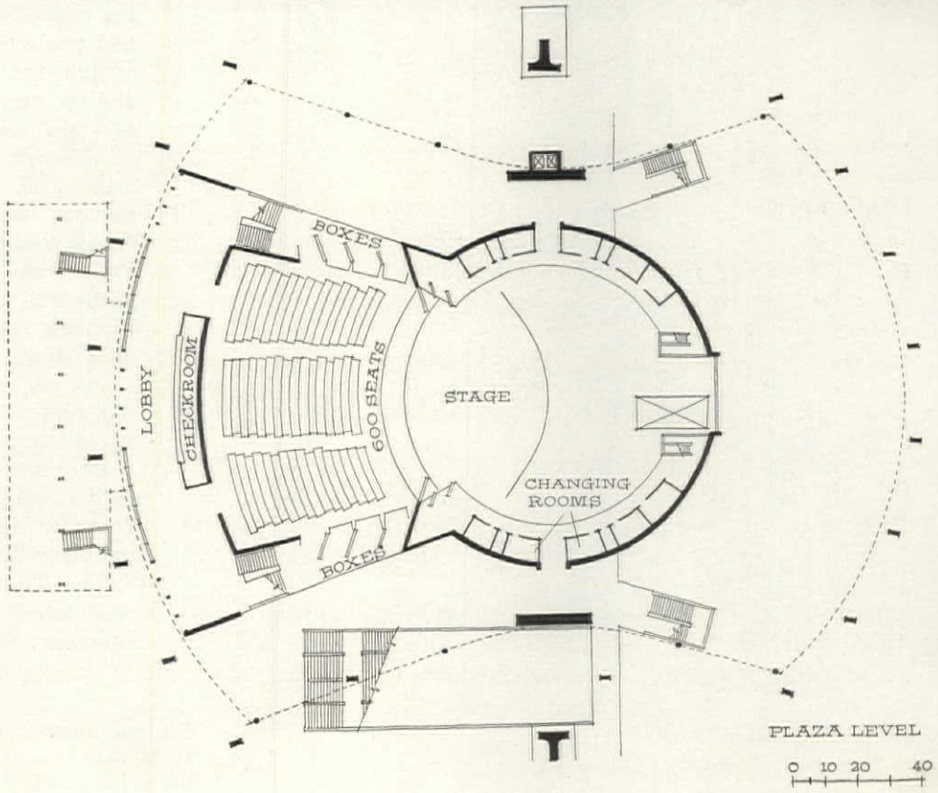
Several questions arise in appraising Tallahassee's proposed civic center which is so excellent in the main: 1) Is it necessary to have any



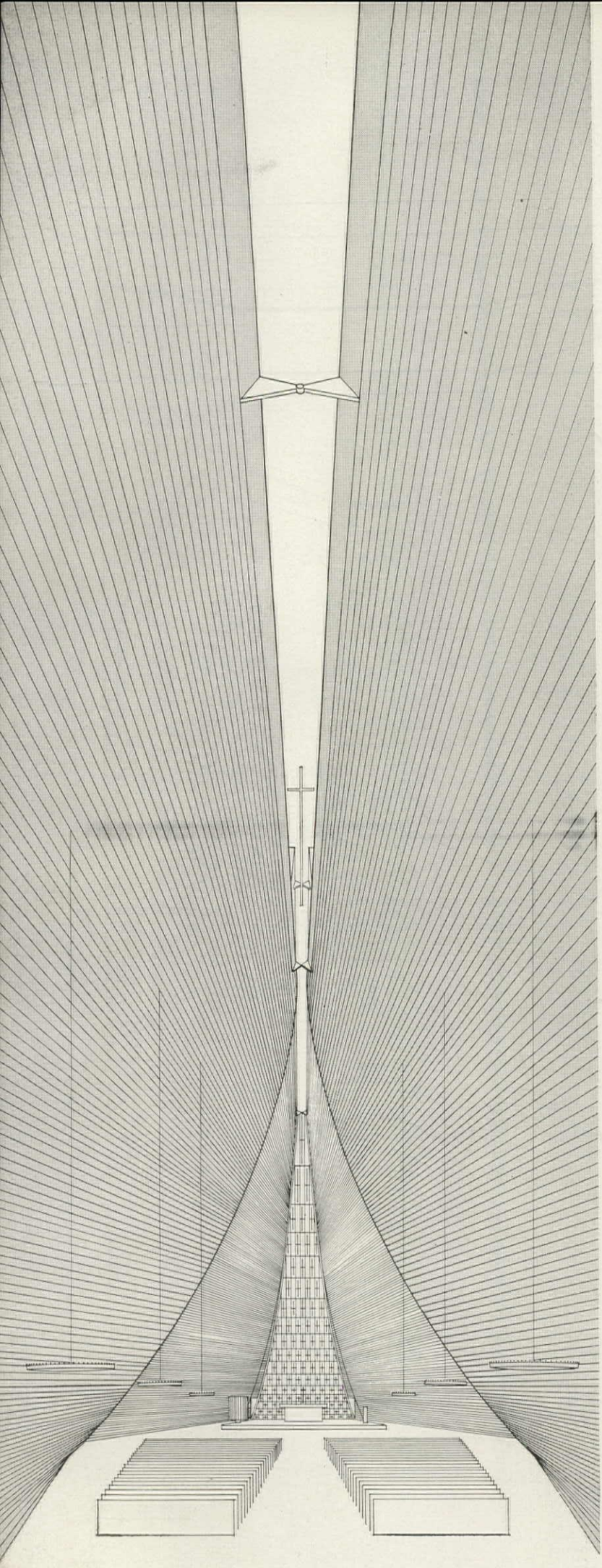


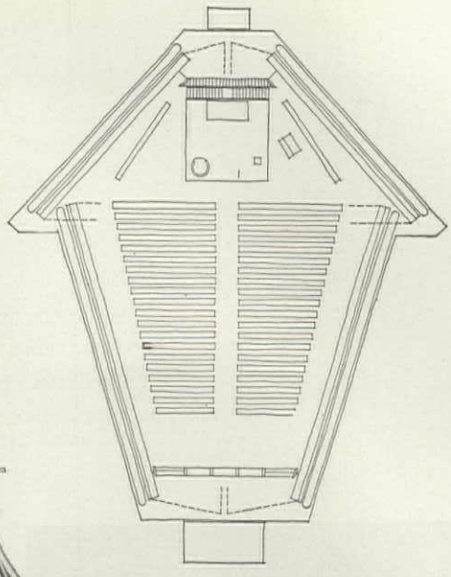

LONGITUDINAL SECTION




subdivision at all of the auditorium, with its inescapable problems of closure and acoustics? 2) Is it justifiable to jack a 4,500-seat auditorium high off the ground so that a 600-seat theater and services can be put under it? 3) Why are almost no works of art in mural, mosaic or sculpture form included in the design—inside and out? 4) Why has so little attention been paid to the possibilities of outdoor presentations? A bandstand is included, to be sure, but anyone who has enjoyed an evening concert in the Hollywood Bowl, or open-air opera at the Baths of Caracalla in Rome will not soon forget what the stars, the moon and a dulcet night—Florida's specialties—can do to one's enjoyment of music.







On a dusty, windswept hillside above the Formosan city of Taichung, a shape of strangely delicate, sweeping beauty will soon rise from the center of the campus of Tunghai University, Free China's first Christian college. It will be a chapel enclosed by four warped planes resting lightly on the ground, barely touching each other across strips of glass at the top and sides. Here, probably for the first time, the geometry of the hyperbolic paraboloid will be laid on its side, springing directly from the earth to form a gently sculptured tent.

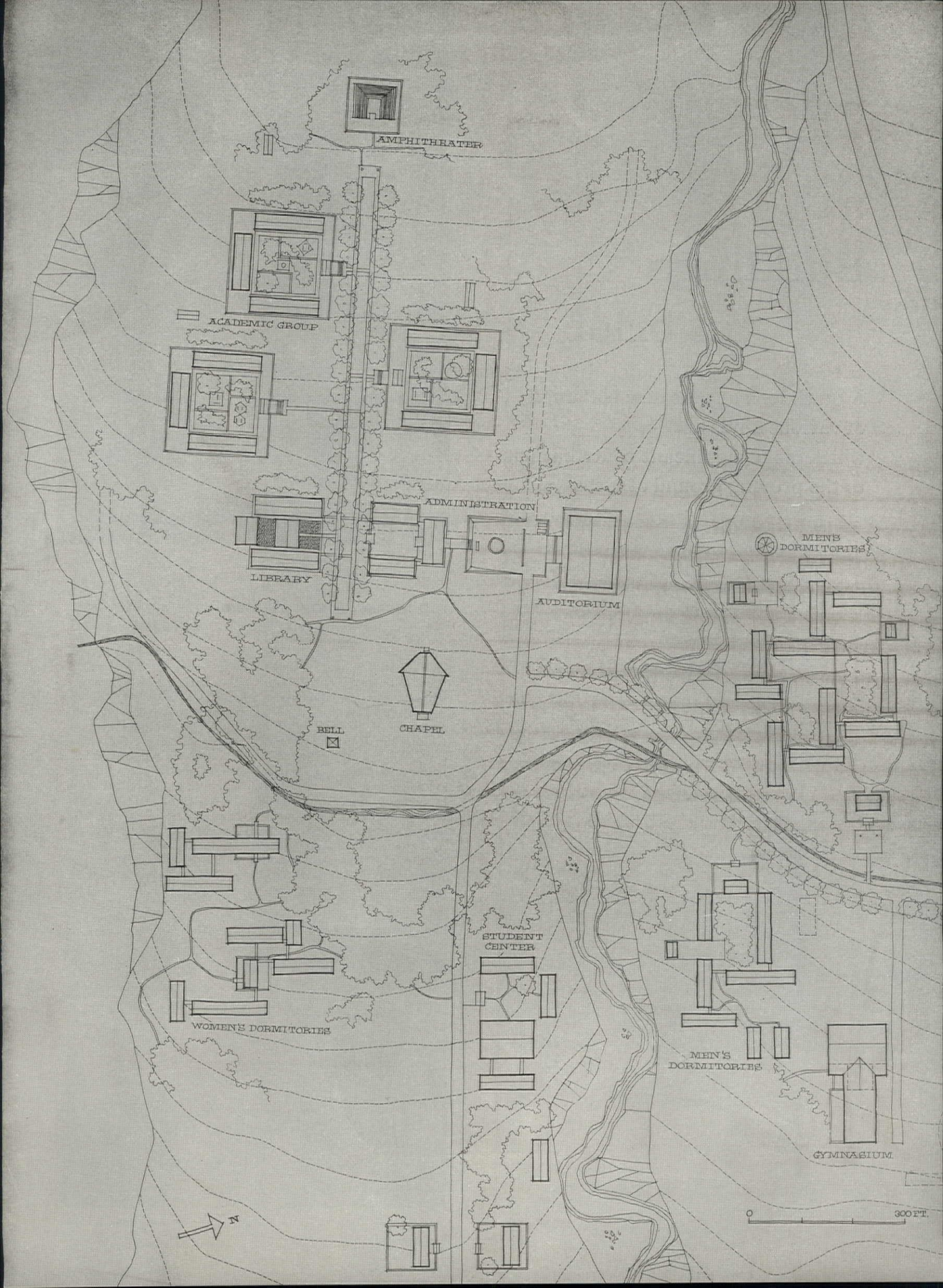
Inside, the curving shells will subtly mold the space, allowing it to billow out horizontally from the entrance to the widest point at the crossing, then in again to focus attention at the altar (see plan above). Overhead, the curves will sail upward, gathering the space below and projecting it to the infinite through a bright slit of light that runs the length of the ridge. This skylight, and the vertical sidelights facing toward the altar, will give sculptural modeling to the shells' curved cheeks.

Although the chapel's opposing shells appear to be leaning on each other, they actually need only very tenuous connections across the slot at the top, for the forces within the gently curved shapes are such that the two shells *on the same side* support each other. The shells will be rigid but able to "breathe"; each plane probably will be built in three sections with a core grid of 2 x 6's or 2 x 8's sandwiched between diagonal sheathing on opposite sides. Once in place the sections will receive a final layer of shiplap on both faces, forming a staunch five-ply structure.

Built for the United Board of Christian Higher Education in Asia, the 500-seat chapel is financed by a grant from the Henry Luce Foundation, which was established by Henry R. Luce to honor the memory of his missionary father. The design was contributed by Ieoh Ming Pei. Associates: C. K. Chang and C. K. Chen. Structural engineer: Georgio Baroni of Roberts & Schaefer.

*Graceful interior is topped by a narrow skylight. At the end is a wooden grille.*

*Chapel stands 72' high, is thus a landmark at the center of the campus.*


AMPHITHEATER
ACADEMIC GROUP
ADMINISTRATION
LIBRARY
AUDITORIUM
MEN'S DORMITORIES
BELL
CHAPEL
STUDENT CENTER
WOMEN'S DORMITORIES
MEN'S DORMITORIES
GYMNASIUM
N
0
300 FT.

# Buildings in brief

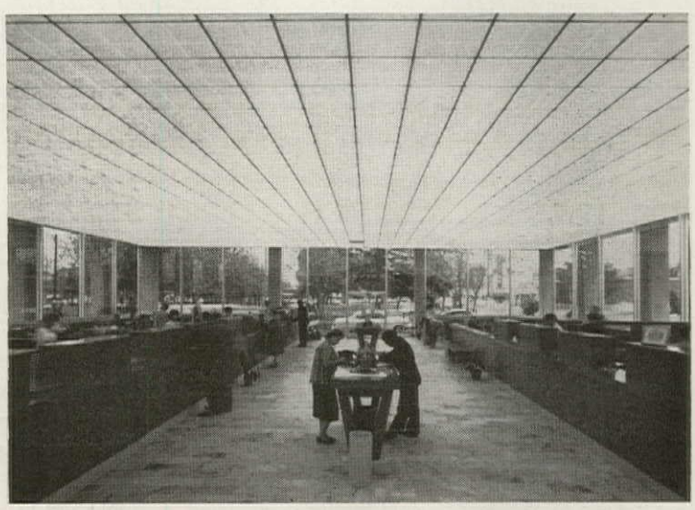
A quick look at nine new buildings
of various kinds
which make significant contributions
to the proving ground of ideas



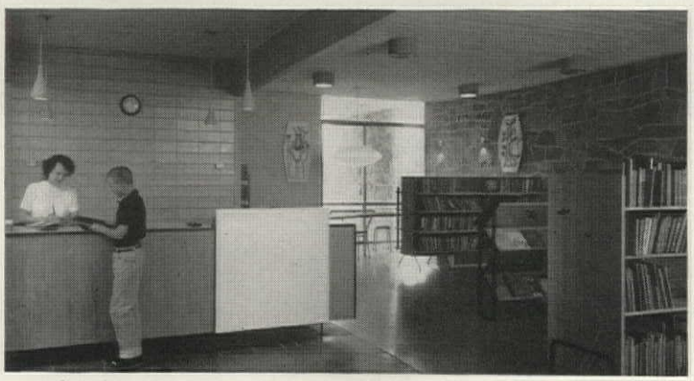

PHOTOS: RONDAL PARTRIDGE

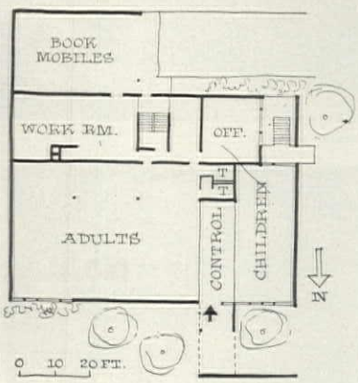
**FOR A BANK, A NEW BUILDING WITH AN OLD SIGN**

"Bank," the sign says, in bold vertical letters, and "This is a bank" is what the simplified Greco-Roman columns, representing stability, are intended to say to all passers-by in the friendly suburban town of Concord, Calif. But the friendliness is in there too, in the indoor-outdoor aspect obtained by glass-walling. In a community in which most banks look like ordinary stores heavily burdened with marble, the architects of this one for the American Trust Co. have stuck to simple materials and clean interiors, avoiding external adornment of any sort. But then there was that sign: some of the directors were agin' it, but some just hated to see it go. So in the end it stayed—off the building but out in the parking lot, where it now serves usefully as entrance marker, nostalgically as link to the Good Old Days. Cost: $180,626, or $19.50 per sq. ft. Architects: Carl I. and John Carl Warnecke; structural engineer: John A. Blume; general contractors: Swanstrom & Stahl.










PHOTOS: (ABOVE) DEARBORN-MASSAR; (BELOW) ERNEST BRAUN

## FOR A RURAL LIBRARY, FRIENDLY FUNCTIONALISM

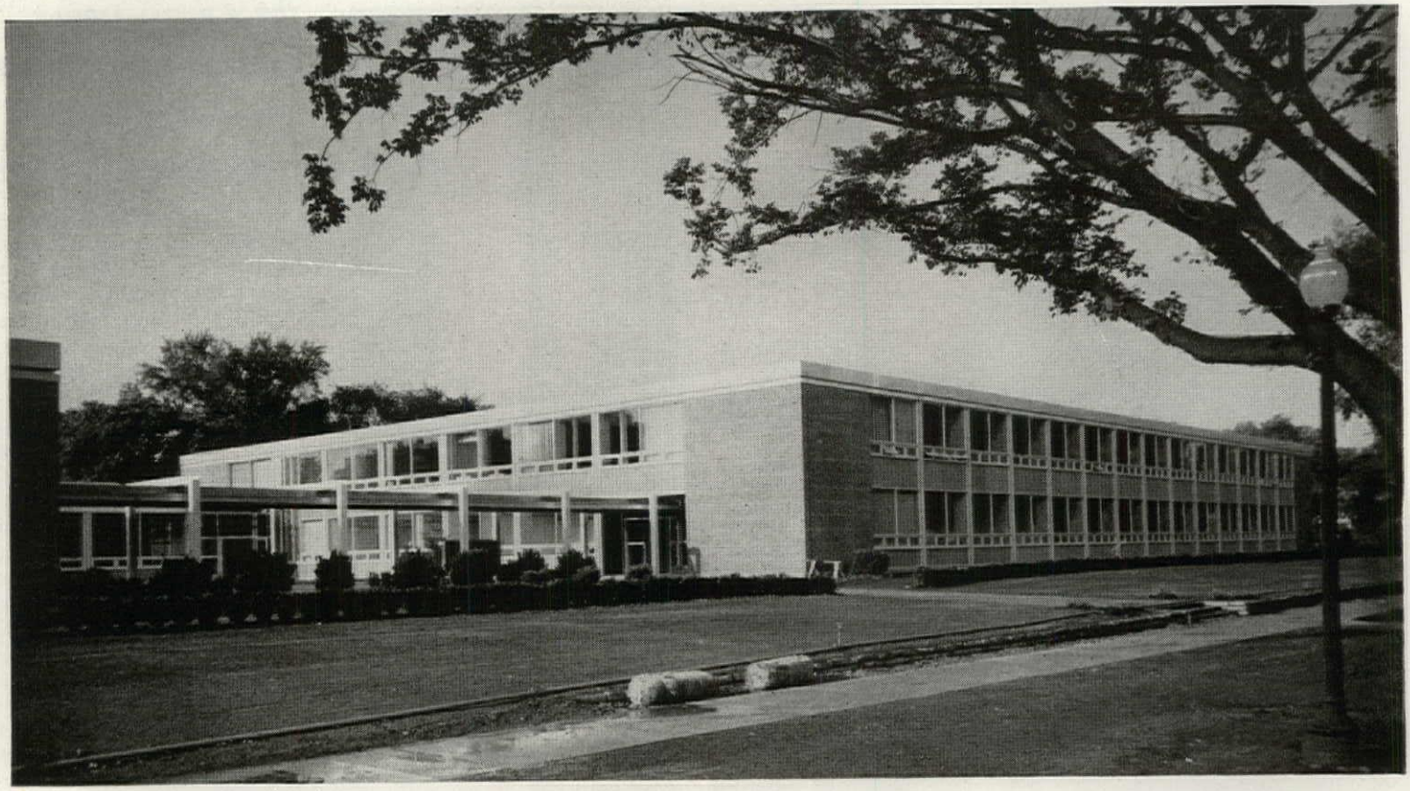
The name of the town is Opportunity, and the friendly little library here—a fine example of opportunity taken—is one small branch of the Spokane County, Wash., rural library system. The library board, consisting of the librarian and two other ladies, a superintendent of schools, a Jesuit Father and a retired businessman, took a keen interest in the building program in all its stages. They never considered any architectural experience other than contemporary; they asked only that local materials should be used wherever possible. Architects chose a native granite, played it off against jade-green glazed tile and aluminum trim. Cost: $90,000, or $8.65 per sq. ft. Architect: McClure & Adkison; structural engineer: Lyle C. Campbell; contractor: Purvis Construction Co.

## FOR DANCE STUDENTS, A FLYING DECK

This Marin County, Calif., dance deck speaks for itself: it is for dancers, it is a deck, soaring out in free, wooded space, hardly seeming to touch the ground. From the five arched tiers of "bleacher seats" you look out on live oak, redwood, madroñas, and the blue bay, with Mount Tamalpais to the west and San Francisco far off to the east. Two of the great trees form a natural proscenium arch; all the trees together are a nature-made backdrop and reflector for sound. Behind you, a long flight of stairs curves up to the community house. Architect: Lawrence Halprin.

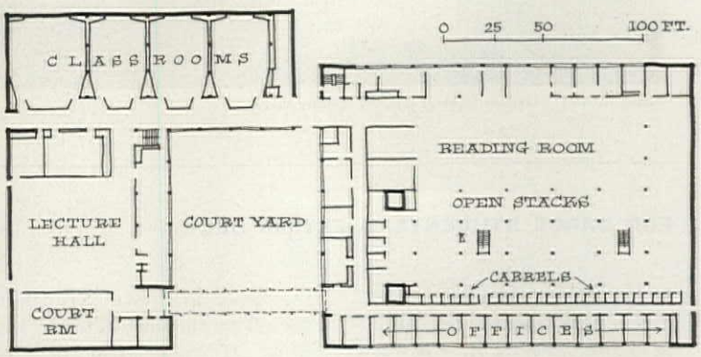


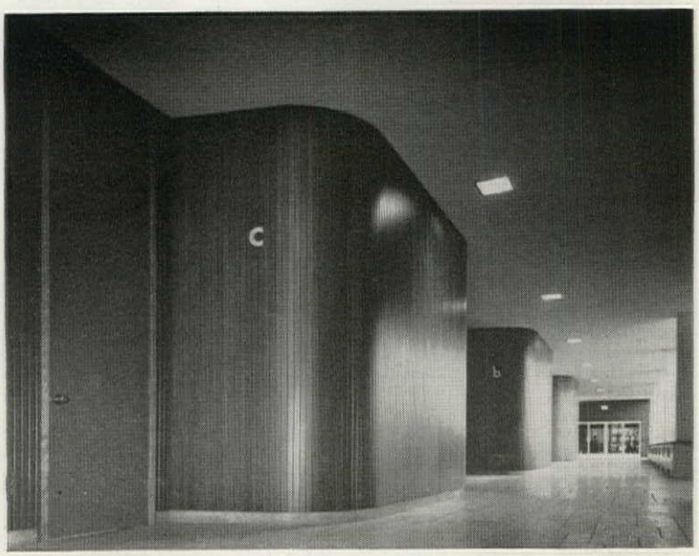




PHOTOS: (ABOVE) GLEISSMAN STUDIOS; (BELOW) HEDRICH-BLESSING

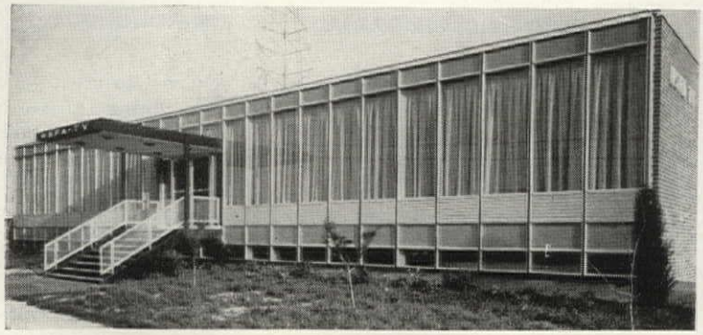


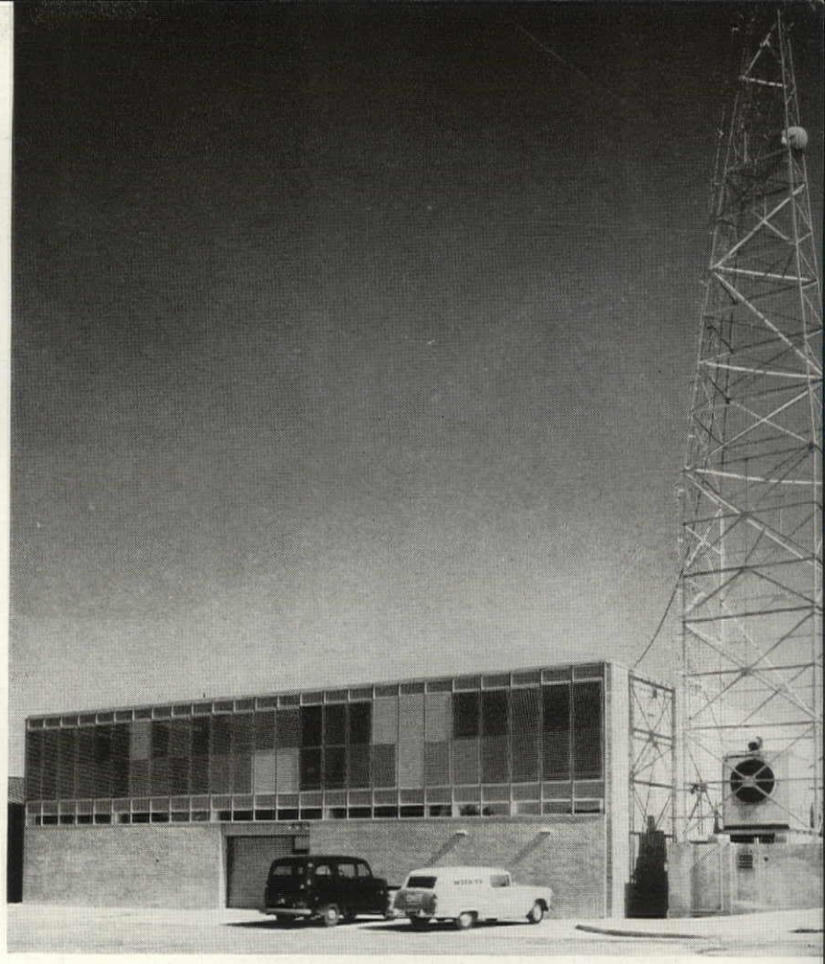


## FOR LAW STUDENTS, A CLEAN BREAK

On a campus almost entirely Georgian, the new University of Illinois Law School stands out like a well thumb—a low, L-shaped, colorful thumb (the classroom building) extending from a two-story, rectangular, but otherwise similar heel of palm (the law library). Exterior materials are brick, glass, aluminum; colors are brick, silver, beige, blue. Interiors are chiefly gypsum and plaster, dramatically invaded by imposing vertical bulges of warm walnut plywood where classrooms obtrude into smoking corridor — a warmth maintained in either walnut or mahogany within classrooms, courtrooms, and conference rooms themselves. In the tiered classroom, desks run in solid unbroken arcs from aisle to aisle—one big long desk for every nine students—to allow the spreading out of books and study materials during lectures. Cost: $2 million, or $17.30 per sq. ft. Architect: E. L. Stouffer; designing architect: Ambrose Richardson; engineers: Balke & Clark; contractor: E. N. DeAtley.

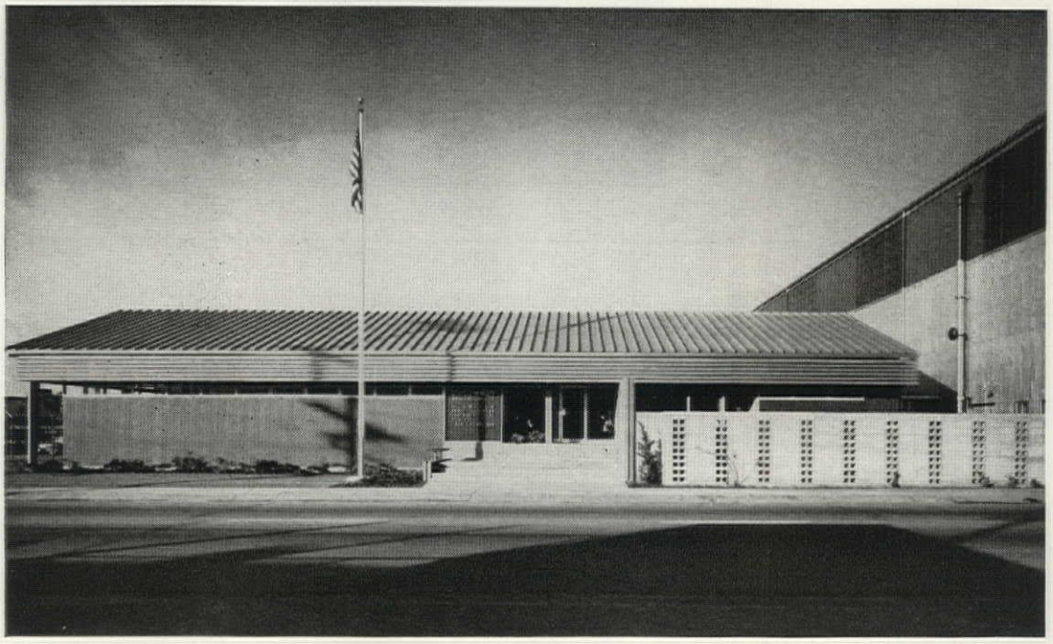




## FOR A TV STATION, A CHANGING WINDOW PATTERN

A nice clean curtain wall in front and an interestingly variable window pattern in the rear distinguish this little TV station (WSFA) in Montgomery, Ala. Clearview glass jalousies on the south elevation, baked-enameled for opaqueness, produce a changing façade pattern as occupants adjust them to full-open, full-shut, or somewhere in between, depending on hours, seasons, whims. In an area in which TV is still a comparative novelty, WSFA keeps its hordes of visitors out of the hair of production crews by piping (or "mirroring") up to main lobby full-view periscope coverage of all activity in studios and control rooms below. Cost: $147,470, or $10.87 per sq. ft. Architects: John Shaffer and A. L. Williams; structural engineer: Cecil Williams; general contractor: Bear Brothers.

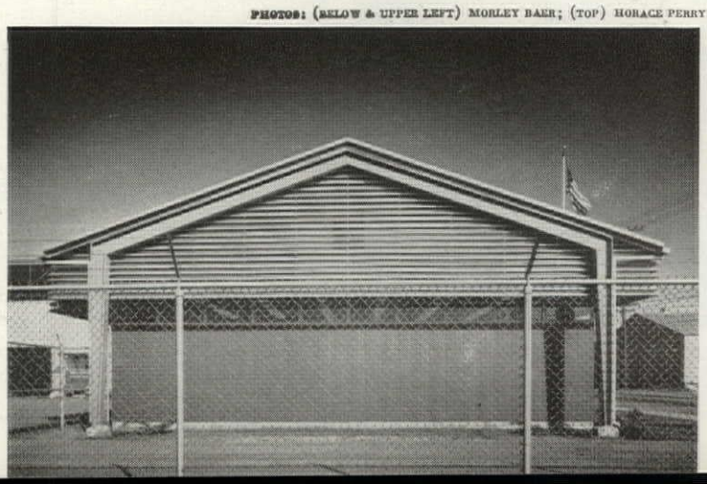
## FOR A SUPPLY COMPANY, A ROADSIDE PREFAB OF GOOD DESIGN



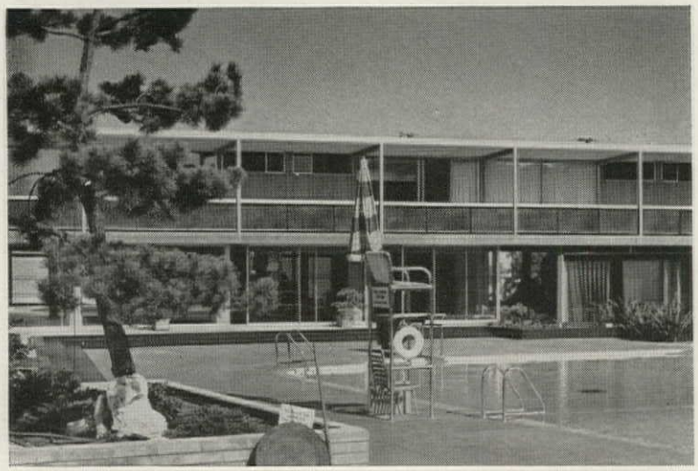
Ducommun Metals & Supply Co. wanted a small, mostly prefab office building put up beside its Berkeley, Calif., warehouse, and wanted it put up in a hurry (six months). What it got (in four and one-half months) not only meets all specifications, but is well enough designed to provide a sharp contrast with the usual commercial cheesebox wayside desolation (see cut). To a standard metal prefab core, the architects added aluminum sun-control louvers, an aluminum entranceway, brick facing, an exterior color scheme in deep "Ducommun" blue, velvet gray and red-lead red. Architects: Kitchen & Hunt; George T. Rockrise, associate. Structural engineer: H. J. Brunnier; contractor: C. Norman Peterson.

PHOTOS: (BELOW & UPPER LEFT) MORLEY BAER; (TOP) HORACE PERRY









PHOTOS: (ABOVE & RIGHT) ERWIN LANG; (BOTTOM) JASON HAILEY

## FOR A COUNTRY CLUB, RADIANT HEAT THROUGHOUT

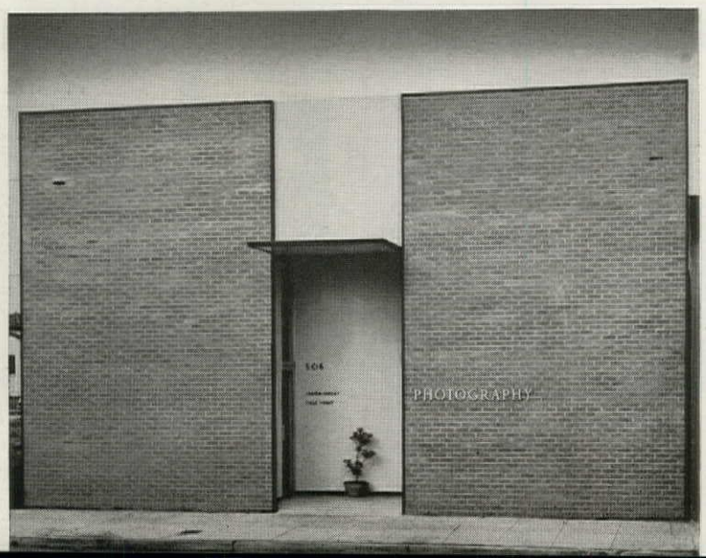
A million-dollar project for middle-income relaxers, the Mission Valley Country Club sprawls over 225 San Diego acres. Its new clubhouse, constructed around an existing (and simultaneously renovated) locker room, is a low, rambling den of luxury built of brick, wood, fieldstone, plaster, and maybe 225 acres of glass. There is radiant heating for the dining room, bar, "Garden Room," outdoor patio and swimming pool—for everything, in fact, except the golf course. Thanks to the radiant heating, sliding-door units between patio and dining room may be removed to create one great open dining area—to which, on occasion, bar, lounge and "Garden Room" may be added. (The kitchen has already served over 2,000 people at one time.) Other features: a lounge with an open grill and suspended fireplace; a sunken main bar with a fireplace and panoramic view of golf course; fountains and waterfalls in the patio. Cost: $675,000, or $16.15 per sq. ft. Architect: William F. Cody; landscape architect: Harriet Weimer; structural engineer: William Porush; contractor: Carl Myehler.



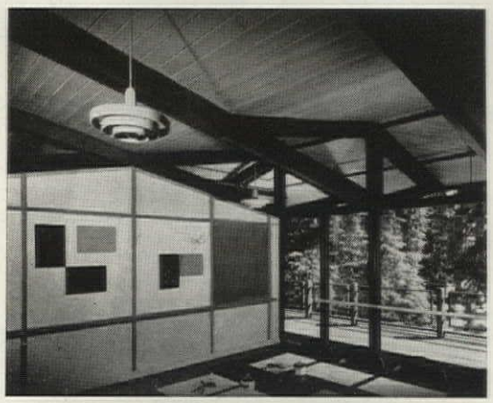
## FOR A PHOTO STUDIO, A REMODELED GARAGE

This striking studio for Los Angeles Photographer Jason Hailey was made out of a 35-year-old former garage, tire-retreading factory, grocery store, warehouse, silent-film theater and no man knows what else. The architect applied a handsome veneer of common brick (for economy) and hard plastic laminate (for easy maintenance and refinishing), then perked up the geometry with a steel canopy that had to (and does) meet code requirements as a "removable awning." The only structural change was to knock out the front midspan column, replace it with one on either side of the entry. Architect and interior designer: Craig Ellwood; contractor: Haig V. Ouzounian.









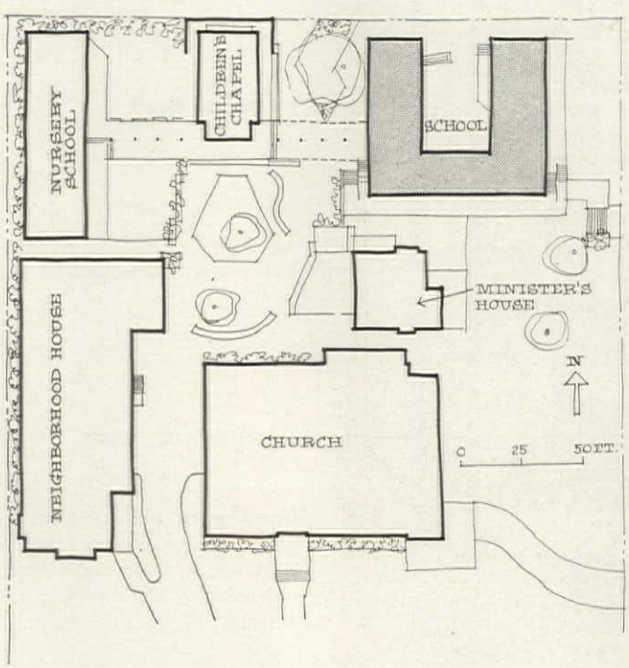
## FOR A SUNDAY SCHOOL,

## A CLEAR CONCEPT, OPENLY STATED

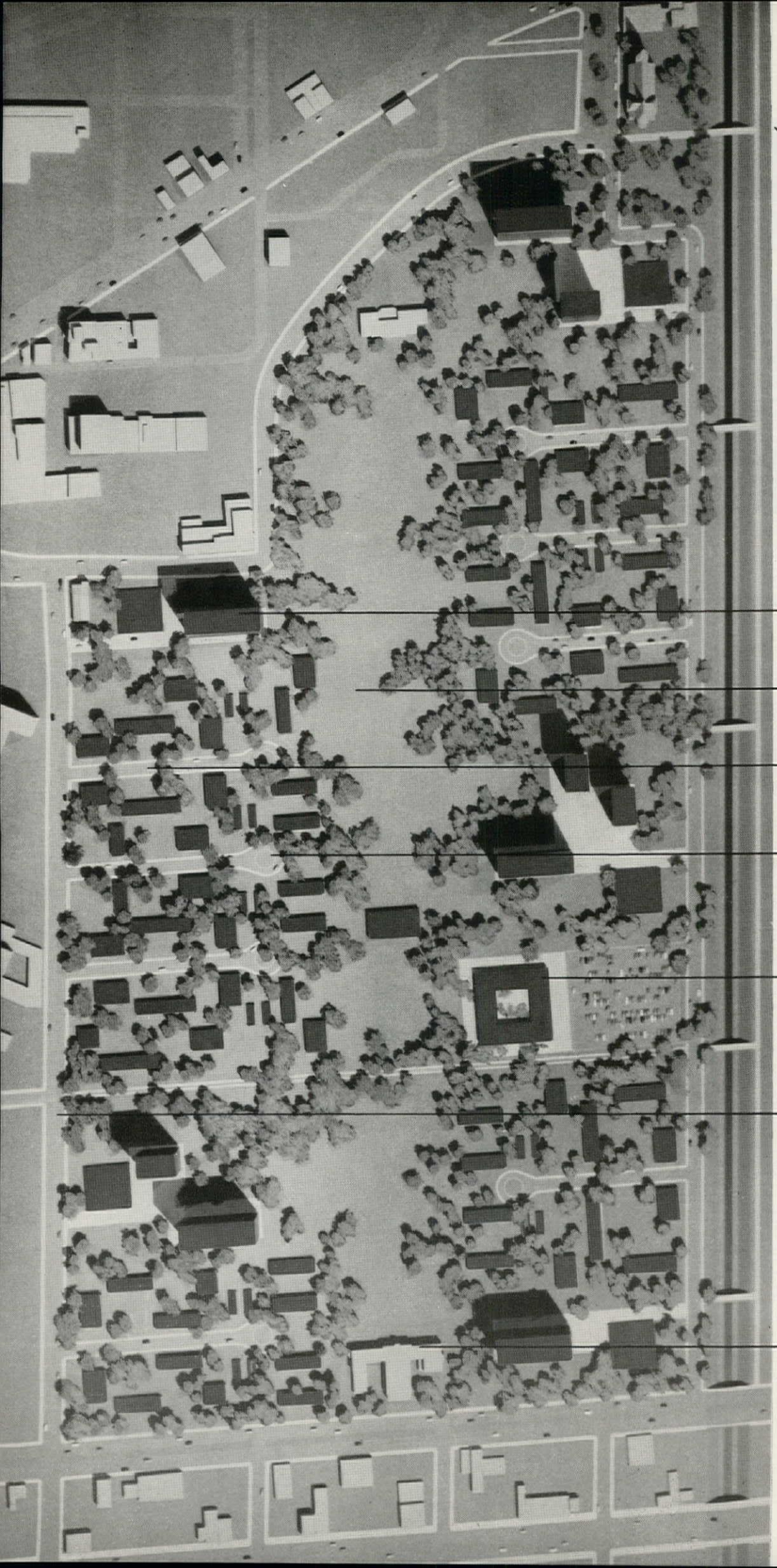
Already cited for its Children's Chapel (AF, Dec. '54, and barely visible at the left of the photo above), the Pasadena Neighborhood Church has now added a religious education building that architecturally exemplifies those "clear concepts, openly stated" of which, in other connections, its children will often hear. It's constructed with simplicity and directness, principally of Douglas Fir. At both ends of the central wing, two-story T-pattern redwood stairwell-screens strongly accent the over-all design; 8′ overhangs control the sun, and each classroom leads out through large sliding doors in an all-glass wall onto either a balcony guarded by a deep-blue metal mesh or a paved exterior area. The new Sunday School fits easily and comfortably into the whole little complex of prize-winning modern structures added in stages over the past nine years (Nursery School, 1948; Children's Chapel, 1954) to the original Neighborhood House, minister's house, and 70-year-old church itself. Architects: Smith & Williams; landscape architects: Eckbo, Royston & Williams; sculptors: Jean and Arthur Ames; engineers: Kolesoff & Kariotis; contractor: Ted Tyler.



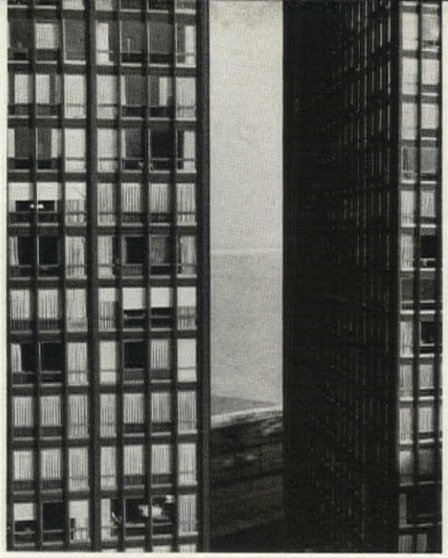
PHOTOS: JULIUS SHULMAN






**Open park** character of the proposed superblock for Detroit will be maintained despite a density of 22.6 dwelling units per acre (including city park).



860 Lake Shore Dr. apartments, Chicago

# The Miesian Superblock

## Famed Architect Mies van der Rohe and his team provide a classic prototype for urban renewal

Last month in Detroit's long cleared Gratiot Area,* city employees set out a winter planting of trees in a new park; a real estate firm opened a rental office; a steam shovel pushed its claws into the frozen ground.

In any other setting, these events would hardly be noticed. But Gratiot has almost tenaciously remained in its limbo existence for over four years, as if waiting for a special state of grace. The activity last month marked the opening of the gate. The Gratiot Area was being turned into Lafayette Park—a bold architectural vision based on a general theory of city renewal.

As such, Lafayette Park will almost surely stand beside such historic demonstrations of planning as the British new towns, the American greenbelt villages and the superblock colonies starting with Radburn, N. J., and culminating at Baldwin Hills, Los Angeles.

As a matter of fact, Lafayette Park is a greenbelt village in a superblock—a self-contained settlement of 7,000 persons (about the size of Concord, Mass.; or Oberlin, Ohio; or Oregon City, Ore.). Moreover, this village is located only 3,000′ from the heart of downtown Detroit—within walking distance of the industry, commerce and recreation of the central city.

It is not inappropriate to compare the plan to Concord or Oberlin or Oregon City; but it is as if these places were built within the ring of a single peripheral street; with a common or a campus or a grassy main street in the middle; with a sense of safety and peace which these places have not had since Detroit put the manufacture of automobiles on an assembly line.

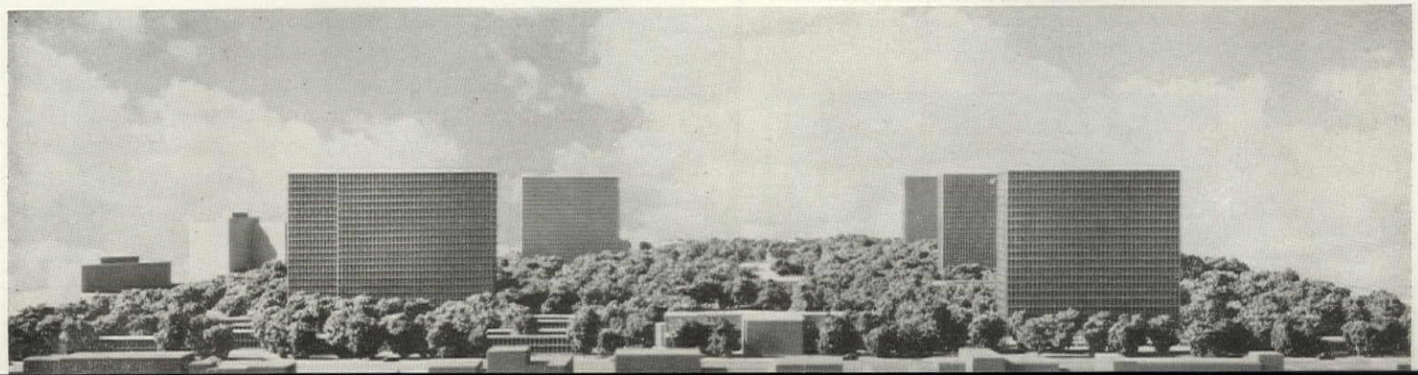
The central feature is a city park, combined with school and playgrounds, approximately 27 acres in size (including the Lafayette Extension), with a four-acre neighborhood shopping center alongside. The park itself cuts a 300′ swath through the ⅔ mi. length of the plan.

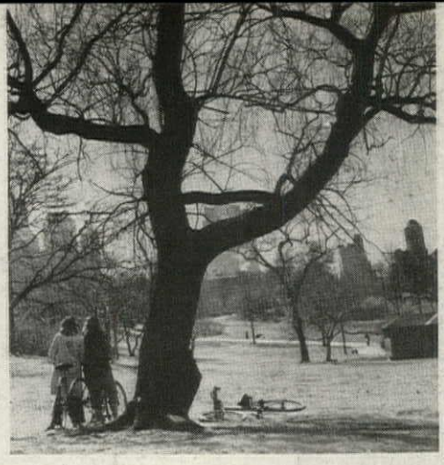
On either side of this park, the clusters of one- and two-story houses and the widespread 22-story apartment towers are arranged around cul-de-sac streets which push in to the edge of the park.

This mixed pattern of high and low housing has long been a theoretical objective in renewal projects. It makes it possible for the towers to live on good terms with each other, each standing free of the other's shadow. But even more, the concentration of housing in the towers (nearly 84% of Lafayette

* FORUM has covered Gratiot's troubled history from its beginning. For an earlier redevelopment plan and the unusual circumstances surrounding it, see AF, March '55. For the first reports of the project now under way, see AF, March, April, '56.

PHOTOS: (BELOW) BILL ENGDAHL, HEDRICH-BLESSING; (ABOVE) WERNER BLAZER





ALLAN GRANT—GRAPHIC HOUSE

The first superblock, New York's *Central Park*, was conceived as a place for the "huddled masses" of the city to know something of nature even though they could not live in the country.



ANDREAS FEININGER—LIFE

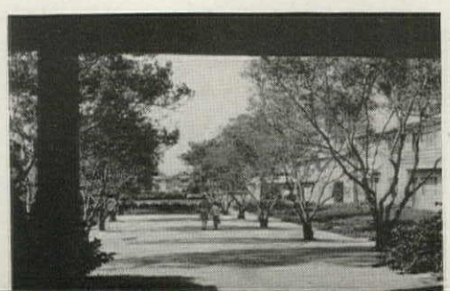
. . . Superblock with extra free space but without the real natural sustenance of a park was built as recently as New York's Stuyvesant Town: all "high rise" with density of 142 dwelling units per acre, economical but largely shaded.



HERBERT GEHR—LIFE

. . . A small formal park was set in the middle of some projects, such as New York's *Parkchester* (density: 94) as a token link to nature, separated from the housing by a busy trafficway.

. . . But the intriguing possibility of a park without traffic, with housing within its precincts, caught the imagination of a few pioneers. Architect Clarence Stein planned a number of classic examples culminating in *Baldwin Hills*, Los Angeles (density: 8) where all the houses were "low rise." Its land area is almost identical to the new combined "high" and "low rise" Detroit superblock, *Lafayette Park*. . .



MARGARET LOWE

Park's dwelling units are in them) makes possible the open site plan.

Within this framework, it has been possible to provide a wide range of living accommodations for a truly balanced community. Lafayette Park will not be an all-alike settlement of young married couples, each with two children and a dog.

In this setting, some of the attributes of an earlier living pattern (in Concord or Oberlin or Oregon City before the coming of the automobile) will be found again. Kids will be able to walk barefoot to the drugstore; mother can take a job downtown during the Christmas rush; baby sitters will live close by.

**The quiet pleasures**

Just by looking at the plan (p. 128), a prospective inhabitant could assure himself that he was about to be introduced into a settlement in a park, a village in a pattern of trees. He can imagine driving home after work; turning off the peripheral street at one of the cul-de-sacs to park his car in an open shelter or parking area. From here, he walks the short distance to his house.

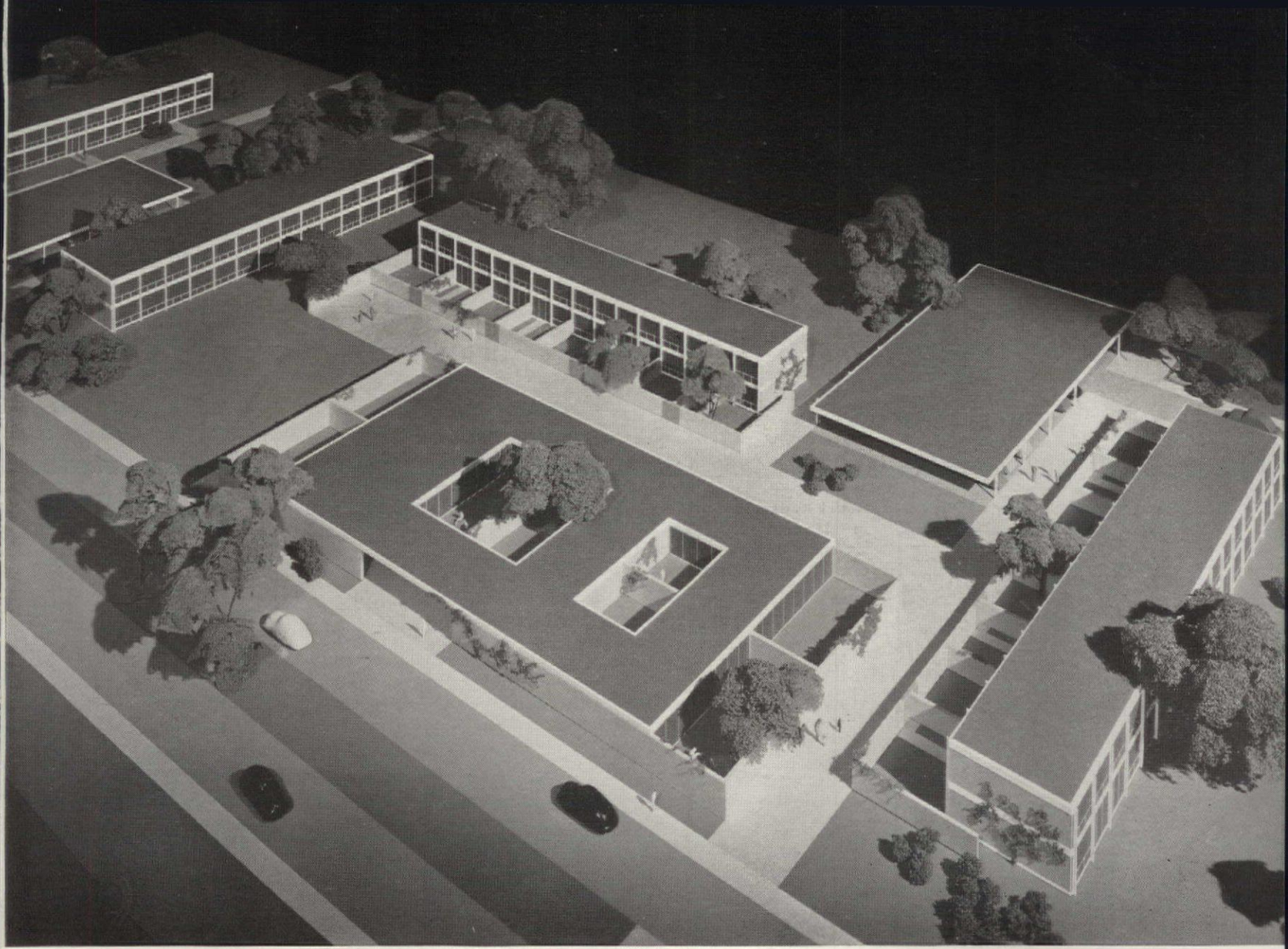
The walk is a quiet pleasure. He looks at the low, walled houses and the gleaming apartment towers beyond through a pattern of white blooming hawthorn and soft green locust trees. He can make the catch his son muffed and toss it back to the kids playing ball nearby. He can watch the lights along the walk come up in the gathering dusk.

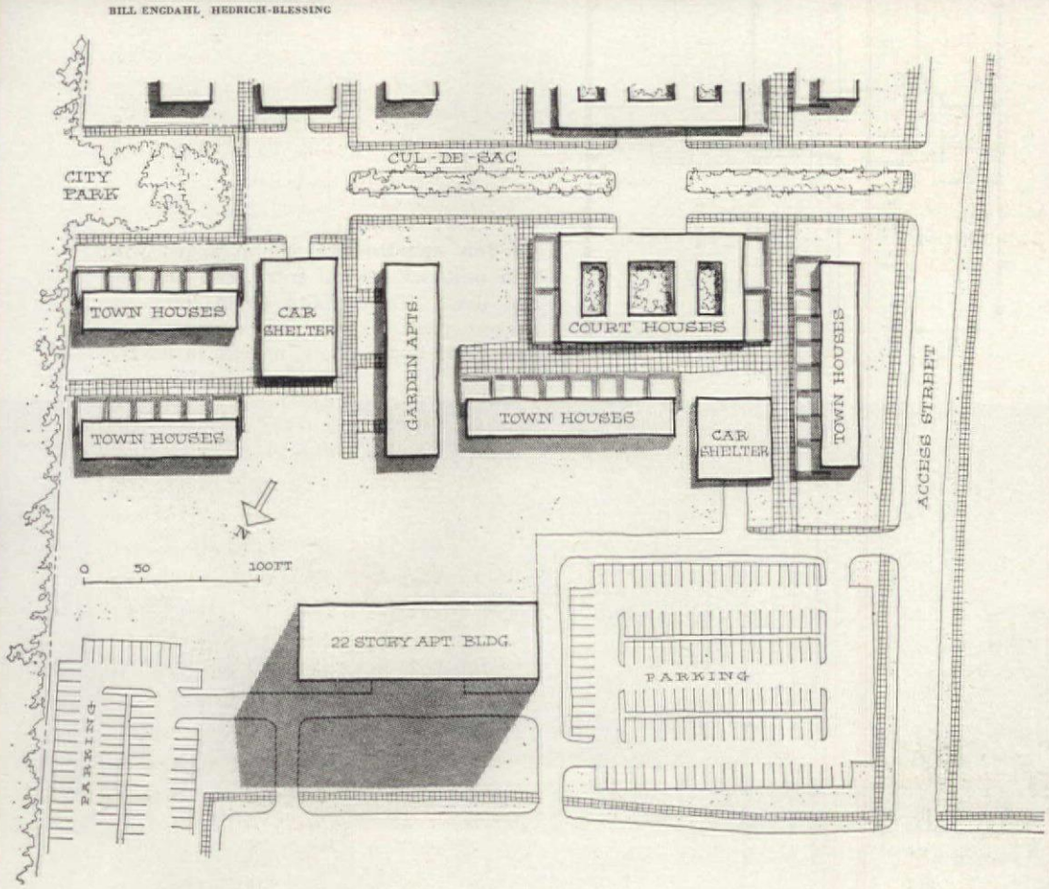
He is coming home through a park that flows uninterrupted to his very front door—park and village are one.

For such a setting, Lewis Mumford's description of New York's Central Park is even more apt: "Conceived in contrast to the deflowered landscape and the muddled city, the park alone recreated the traditions of civilization—of man naturalized and therefore at home, of nature humanized and therefore enriched."

Fantastically enough, it was this bold plan that finally pushed Gratiot beyond its limbo existence. It was preceded by another plan produced for the Detroit Citizen's Redevelopment Corp. by Architects Yamasaki, Stonorov and Gruen, which was much lauded by architects and planners but did not attract any redevel-

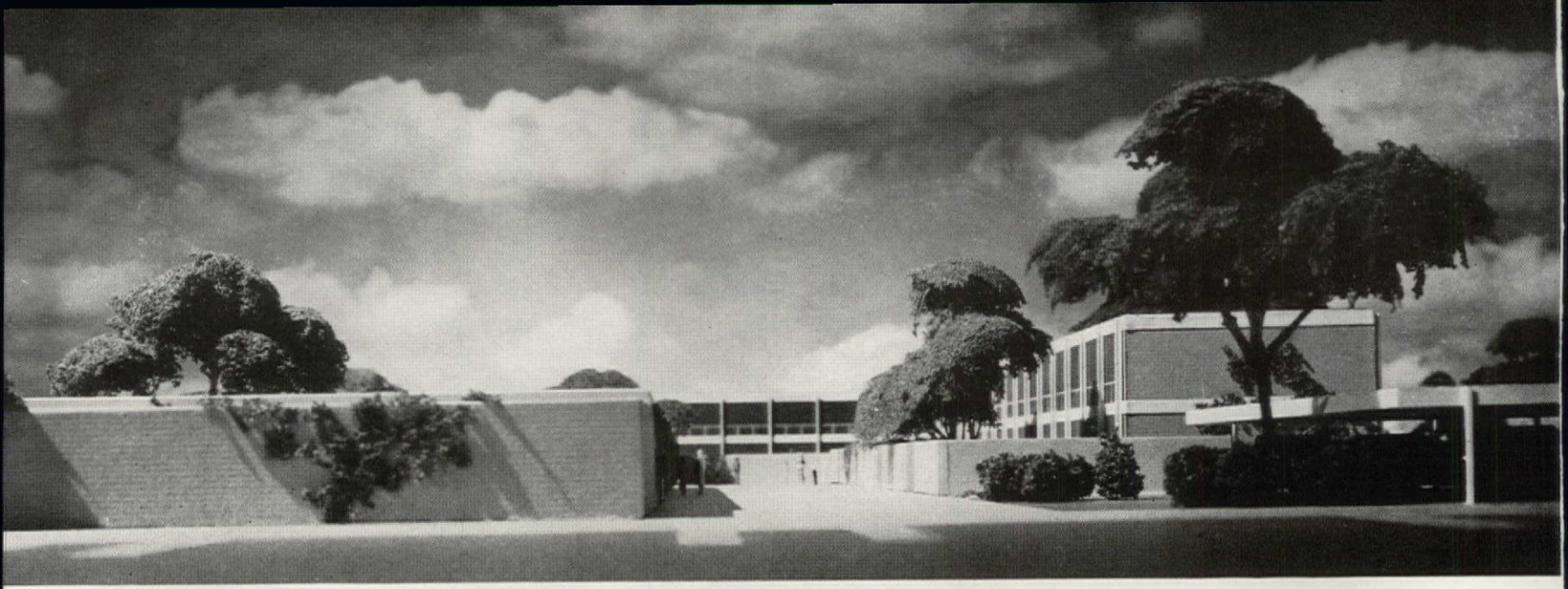
BILL ENGDAHL, HEDRICH-BLESSING

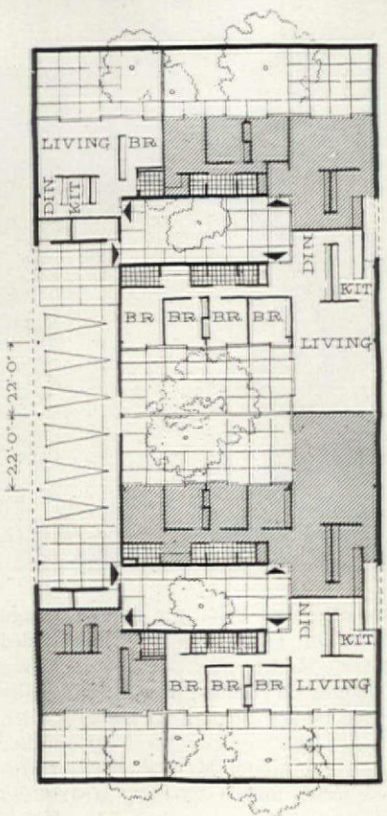




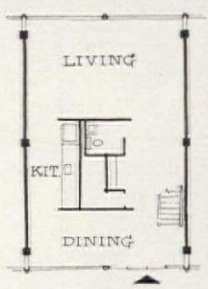

**House clusters** take up mirror image positions on each side of boulevarded cul-de-sac. Model photo (above) shows court house in center, town-house rows separated by car shelter on right, garden apartment buildings separated by another car shelter on left. Map shows a town-house cluster and a 22-story apartment tower at northwest corner of superblock.

LAFAYETTE PARK, Gratiot Redevelopment Detroit, Mich.
BUILDER-DEVELOPER: Herbert S. Greenwald and Samuel N. Katzin
CODEVELOPER: Citizens Redevelopment Corp
ARCHITECT: Mies van der Rohe
PLANNER: L. Hilberseimer
LANDSCAPE ARCHITECT: Alfred Caldwell
STRUCTURAL ENGINEER: Frank J. Kornacker
MECHANICAL ENGINEER: William Goodman

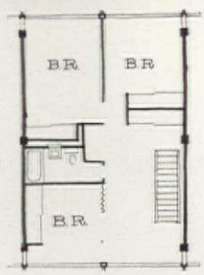





**Court houses** are a favorite Mies scheme in latest evolution (plan and photo left); six units are grouped around two entrance courts. Car loggia faces cul-de-sac.

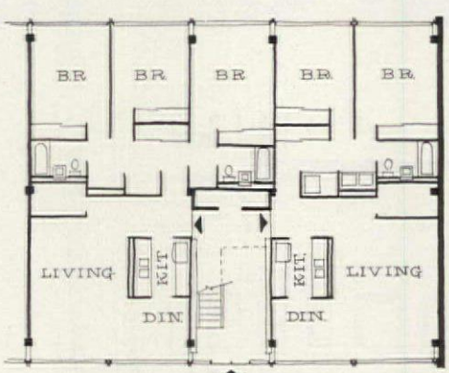



TOWN HOUSE




2ND FLOOR

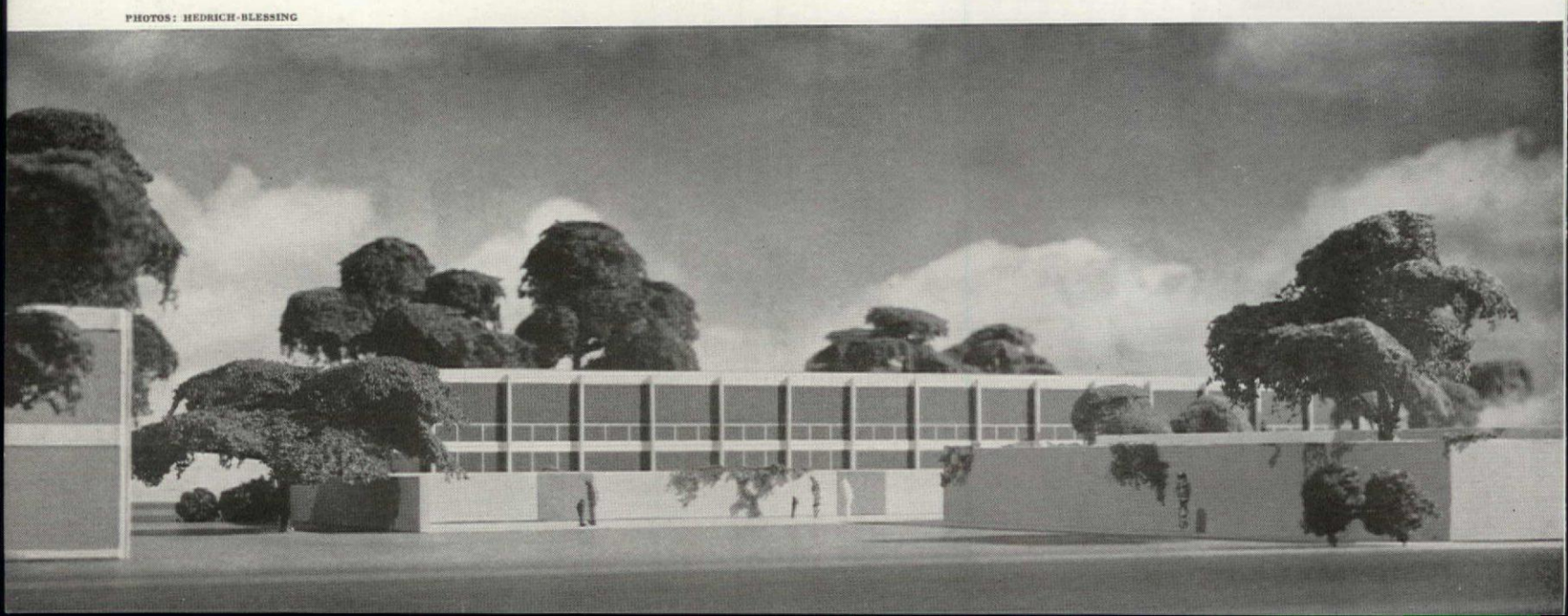
**Town houses** (photo directly above plan) are entered through walled gardens along wide center walk. Utility core at center allows free planning around it for flexible family living.




GARDEN APARTMENTS

**Garden apartments** are arranged with four units off central entry, two units up and down. These units (plan left) are nearest park. (Units are seen in background of upper photo, on left in lower.)

PHOTOS: HEDRICH-BLESSING



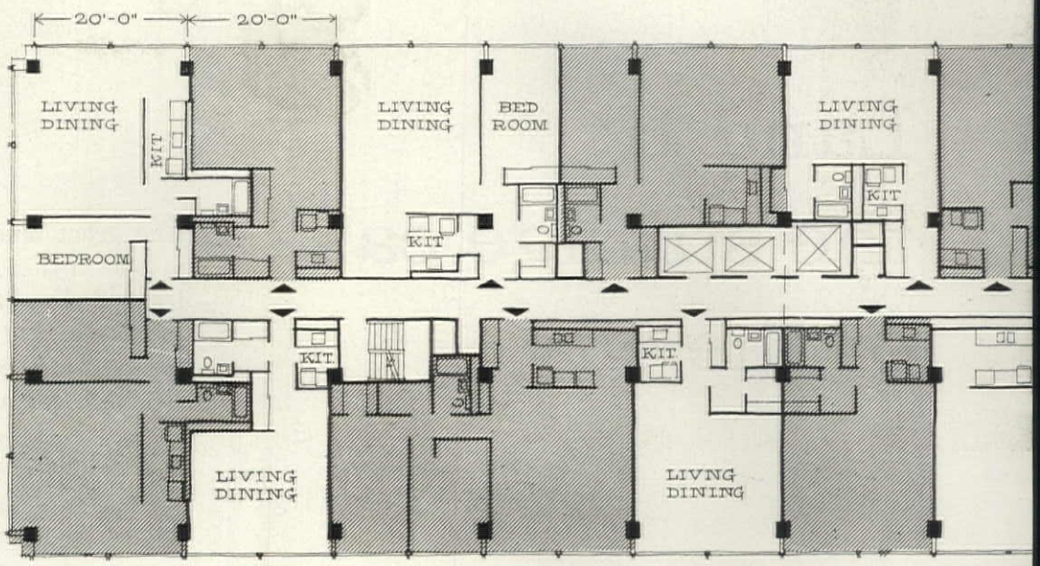
opment capital. When shrewd and dynamic Chicago Redeveloper Herbert Greenwald agreed to be co-developer (with associate Samuel Katzin) of the area with the citizen's group, he insisted on replanning with his long-time associate Mies van der Rohe as architect. Mies picked his long-time companion and associate at I.I.T., Ludwig Hilberseimer, as planner.

The new team was easily able to accept the concept of high and low housing intermixed, which was a prime asset of the earlier scheme. They found the over-all density perfectly satisfactory. But they felt that instead of three superblocks, as in the previous scheme, there should be only one; and with this single stroke they made possible a larger park and a complete segregation of all traffic around the periphery.

In the architectural formulation of this big superblock concept, Mies has preserved the essential simplicity of the idea. The low housing is arranged in groups or clusters, one cluster being set on either side of a boulevarded cul-de-sac. The center of these clusters is a wide walk separated from the cul-de-sac by the low court houses with common wall. A row of town houses is set along this walk, each entered through its own private, walled garden.

The 22-story apartment towers are set on a paved terrace base. In the contracted first floor are neighborhood services to supplant the shopping center: a commissary, a laundry pickup station, barber and beauty shops—an unusual convenience in urban housing schemes.

Mies's architecture recalls the quality of Concord or Oberlin or Oregon City in another sense. The residential streets of these villages once had a simple unity—simple houses sat on a continuous floor of grass and were framed in an overhead arbor of trees. Lafayette Park will look like that, and it will restore some of the community feeling which accompanied that look.






**Tower apartments** are latest evolution of type first built in Chicago. Natural color aluminum window grid filled with large gray glass units is a new Mies skin treatment. Tower shown has 340 dwelling units.

# Land II: the strange case of the city

by FRANK FOGARTY

Despite record urban growth, the land price boom has barely touched the central city. This is a new phenomenon with great significance and opportunity

The great land boom was seen, in last month's first article in this series, sweeping across suburban America, spiraling land prices to some of the highest points in history. But it has had curiously different effects in the central cities. Paradoxically, the cities, which have fed the boom, are only lightly touched by it. Whereas the boom has showered its gold loosely on the suburbs, it has treated the city much more warily, ignoring vast parts of it altogether. Though this has happened before —other land-price spirals have skirted the bulk of the central city—it has never happened at a time like this, when the entire country is urbanizing and prospering at record rates. Thus the event takes on peculiar significance. At the very least, it suggests that a basic change is under way in central city land economics, and that this change is only beginning to be fully felt.

Paradoxically, too, as outer-fringe prices have climbed higher, and sites grown scarcer, the relatively stable values of land in the central city have come to offer new and attractive situations for redevelopment. The land-hungry future may find more space than it thinks in the urban center. Consider the present pattern of things in the city:

▸ Within the old business districts of most cities, land prices show either little change from 1947 or only a slight rise, when measured by the constant dollars of the consumer price index. In some cities there have been absolute declines; in almost all, prices, in constant dollars, are still well below the peaks of the twenties.

▸ Where the business district has shifted onto new land —a gradual process, but one which seems to have gone hand in hand with an over-all trend toward consolidation in many cities—the new use has created pockets where land prices are up as much as 100% to 150% over 1947. These pockets are small, however, far smaller than the business district, which itself takes less than 1% of the area of the largest cities.

▸ Beyond the central zone, land prices show a crisscross of trends: a few sharp rises where there has been an upgrading of use; little or no change where neighborhoods are unaltered, but well-preserved; sizable declines in sections where deterioration has set in.

▸ On balance—weighing climbs against drops—city land prices, in constant dollars, have not boomed and, on the whole, are not much different from ten years ago. The only exceptions to this appear in the West and Southwest, where in the younger cities, population growth has been outpacing the national average.

The trends indicated in these figures are not indis-

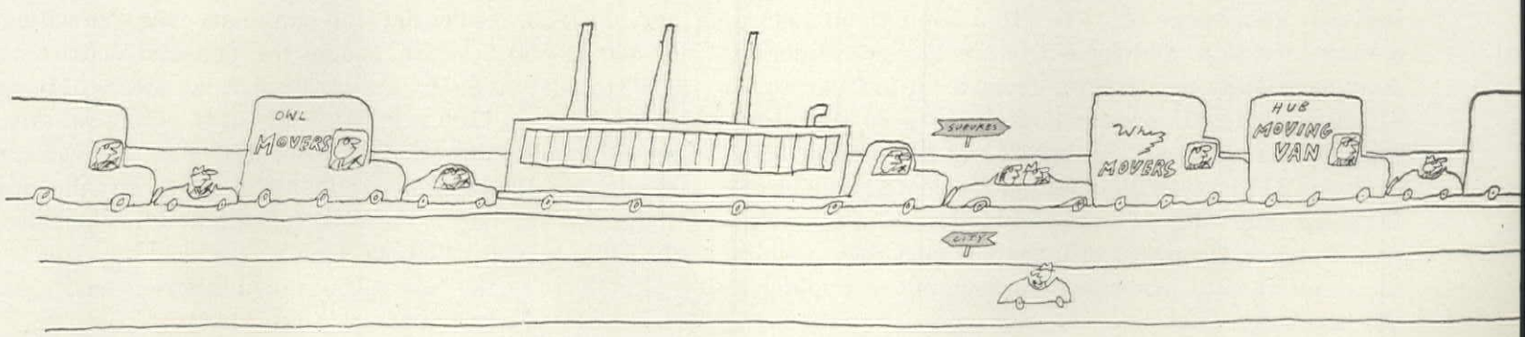
putable. If there is little agreement today about the long-term future of central-city property values, there is only a slightly greater consensus about their immediate past. Partly, this stems from the physical state of land in the city, the fact that it is seldom nakedly visible in the core areas and even less often is sold in the raw. Prices of central city land are largely hidden, concealed in the over-all sales prices of land and buildings combined. To sift one element from the other is, at best, a complicated arbitrary process, and apart from one estimate—by Raymond W. Goldsmith, author of *A Study of Savings in the US*—no national survey has braved the complexities of land valuation (Goldsmith's figures, which are based on rough ratios of land to structure values for different types of real estate, put the current value of private nonfarm land in the US at close to $100 billion, compared with $59 billion in 1928). With only these meager facts, and the few that have emerged from a handful of local studies, most people have been free to choose whatever hypothesis they like about the course of central city land values—that there has been an "almost universal decline within the older and larger commercial centers," which most transportation experts believe, or that "all changes are gains," which is the residue of the single-tax doctrine of Henry George. ("Get yourself a piece of ground," George wrote, "and hold possession. . . . You may go up in a balloon or down a hole in the ground, and without doing one stroke of work, without adding one iota to the wealth of the community, in ten years you will be rich!")

In its study of land prices in the central city, FORUM has turned to the people best able to judge these hypotheses—the realtors and appraisers who have handled the bulk of the property transactions within their areas since 1947. Out of their reports, which focus mainly on the central business district, plus the scattering of academic studies that are pertinent (the most notable: the survey of property values in San Francisco and Oakland by Paul F. Wendt of the University of California), a picture emerges which is vastly different from the one that characterized the twenties.

#### Today and yesterday

When Economist Homer Hoyt compiled his monumental *One Hundred Years of Land Values in Chicago* —a book that after 24 years is still unequaled in the field of land economics—he found that between 1921 and 1928 the sales value of land in Chicago shot up from $2 billion to $5 billion (by 1933, it was back again to $2 billion). In an era that saw a doubling of apartment rents in only five years, a rise of 80% in the cost of office space and up to 1,000% in retail store rents—while operating costs edged up only 10%—land prices staged a runaway. The land area outside the Loop, valued at $900 million in 1910, had increased to $4 billion by 1928; within the Loop, the value of sites moved up 67% in the same period. For inside residential lots in apartment areas, sellers asked—and got—prices as high as $470 a front ft., while some outlying business corners brought $7,000 to $10,000 a front ft. Industrial land sold at $5, $6, and $7 a sq. ft. Bungalow sites were worth $65 to $75 a front ft.

Though a buyer can pay these prices again in Chicago —and can, if he really wants to, top them—the price structure of the city as a whole makes an almost classic case for the way in which this boom differs from the spree of the twenties in its treatment of the urban center. In the heart of the Loop, for instance, land prices in the twenties never did climb the way they did in other parts of the city, but they did reach a level of $25,000 a front ft. in 1929. In 1947, the same sites—along State St., the main shopping thoroughfare—were priced at $14,000 to $15,000 a front ft. Today, after ten




BLECHMAN

years of real estate boom, there is still little change: the price range now is $15,000 to $17,000, a gain of little more than 10% at the top.

Viewed over-all, a gain of about 10 to 20% is about the best that most of the old sections of the city can show (in constant dollars, of course, this is no gain at all). On the South Side, despite the tremendous pressure of a mounting Negro population, residential land prices are not much different from what they were ten years ago—$30 to $50 a front ft. The only exception to this shows where there has been slum clearance and redevelopment, producing some upgrading. The land for Lake Meadows, for instance—the giant renewal project by New York Life Insurance Co. in the central South Side—had tumbled from 60¢ a sq. ft. in 1930 to 18¢ at the depths of the depression, and was worth from 28¢ to 35¢ in 1947. Since 1954, the Chicago Land Clearance Commission has been selling parts of this off to New York Life at 50¢ a sq. ft. for housing and at $1.75 for commercial use. Much the same thing has happened in the slum-ridden near West Side where industrial sites, bought at a range between 60¢ to $2 a sq. ft. in 1952, are now selling cleared for $2.50, $3 and a top of $3.25.

#### Under the influence

By and large, the areas that have felt the boom this time in Chicago are the peripheral sections of the city —the newer, less dense neighborhoods to which the higher-level income groups have retreated as the minority population has spread throughout the inner core. Prices of good, vacant land in these sections have, on the average, tripled since 1947, matching the gains in suburbia. In the heavily residential southwest and northwest areas, land that was $40 a front ft. in 1947, $70 and $75 in 1950, is now $100 and better. The city's long-time bible of land prices—Olcott's Land Values Blue Book—shows that, generally, prices in these growth sections have moved up 10% to 15% each year, with bigger and smaller gains showing on a spot basis: from a range of $4 to $10 a front ft. in 1945 to a range of $25 to $60 for single-family raw residential land near Midway Airport; from $800 a front ft. to $1,100 and $1,200 now for built-up sites on the apartment-lined Gold Coast; from $42 and $45 a front ft. to $100 and $110 for single-dwelling residential land on the far South Side. Based on the costs of sites in the industrial districts, the prices of industrial land show roughly the same upward movement—a doubling to tripling in the last ten years.

In all the cities surveyed, this pattern of pockets of boom amid areas of price stagnation was a common one. In downtown Seattle, for instance, where there has been no major new office building since 1930, land prices are relatively unchanged from 1947 on a constant dollar basis. Atlanta's old retail center, Whitehall St., has fallen behind as the shopping district has shifted to the north, and its top frontage prices, now $11,000 to $12,000, have never regained the peaks of the twenties. In the newer part of the district, though, where use has changed from residential to commercial, prices are up from a top of $250 a front ft. ten years ago to $1,500 and, occasionally, $2,000 for office sites today. One department store executive who reluctantly paid $12,500 for an aging house and lot on the fringe of the area in the early 1940's has survived to see the lot alone offered at $150,000. City-wide, as realtors weigh drops against rises, they think values have been "holding their own."

No other city has had anything to approach the office building boom of New York in the postwar era (p. 104). But though land prices have doubled in parts of Manhattan, the gains have not held up for the city as a whole. FORUM's estimate is that land prices for all five boroughs are now about 10% below 1947, when adjusted to constant dollars.

In Manhattan, sites along Fifth Ave. have moved up from $65 to $75 a sq. ft. to a range of $110 to $125 and a top of $150 to $230 (compared with $300 to $400 a sq. ft. at the height of the twenties). The tearing down of the "el" has helped push Third Ave. midtown values up at least 50%, and the shift of the textile houses from Worth St. has sparked a price rise to about $115 a sq. ft. in the Broadway–Sixth Ave. area below Times square. But against this, much of the land in Manhattan today can probably still be bought at $2 to $8 a sq. ft. An analysis of 126 property sales since 1950 in the Lincoln Square area, now slated for redevelopment, showed an average land price of $7.90 a sq. ft. (In Harlem, one small parcel sold recently for less than 30¢ a sq. ft.) And viewed long range, the price structure shows an uncanny resemblance to the going market of 50 years ago. In 1903, residential land on the avenues was selling at $60 to $90 a sq. ft. and in the financial district at $150 to $250 to $350. Today, residential sites on upper Fifth Ave. are $100 a sq. ft., while in the financial area costs have been averaging about $60 a sq. ft. (Chase Manhattan Bank paid roughly $70 a sq. ft. for the site of its new building in the Wall St. area, and this included the office structure on the land.)

In Detroit, the central business district has been

*continued on p. 246*



FOTO-STUDIO CASALI

Triangular planes unfold a gallery of space in Milan showroom

# The Knoll interior

**From showrooms like these three new ones, it is emerging in strong color to brighten its world market**

The Knoll interior is as much a symbol of modern architecture as Tiffany glass was a symbol of the architecture of the Art Nouveau. But this modern symbol can be specified by the architect, copied by the decorator and calculated by the efficiency expert.

This is exactly what Florence and the late Hans Knoll intended. The success of their idea is marked by the wide-flung folio of enterprise under Florence Knoll—Knoll Associates, Inc., Knoll Textiles, Inc., and Knoll International, Ltd.

But Florence Knoll's prime concern has always been the Knoll Planning Unit, a pilot design group, and she still wears this job like a favorite hat. The Planning Unit's basic task is to demonstrate—to bend the Knoll formula to new problems and to suggest new ways of handling them.

**Freestanding wall panels** and suspended ceiling planes in the Milan showroom's big room, like the Bertoia piece in the left foreground, define space in ever changing aspects as the visitor moves about. Reflections of color in the panels and planes enhance the drama of the gilded Bertoia piece against the chrome yellow panel; and of the Saarinen chairs below the fabric matched cobalt blue of the triangular ceiling plane. A vermillion red panel in the background invites a closer look at the living room group in front of it. These intense, off-primary colors are Knoll trademarks.

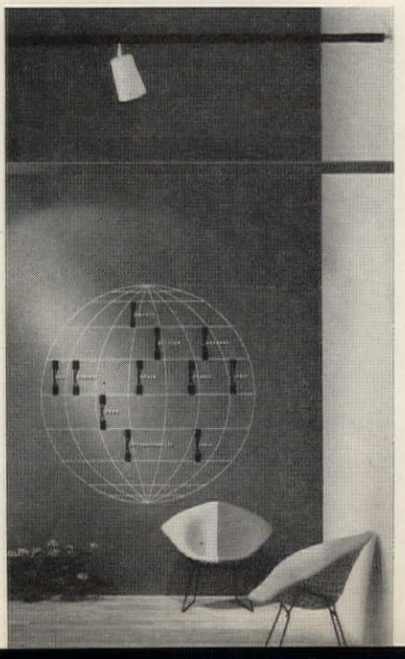


PHOTOS: (ABOVE) IDAKA; (BELOW & OPP. P.) FOTO-STUDIO CASALI

**Open expanse** of Dallas showroom is lightly cut by the hung ceiling overhead. The prefabricated ceiling panels are suspended from a universal joint at the end of wire cable hangers, making installation and adjustment a relatively simple matter. The ceiling system is exploited to the full by using it as concealment for the source of spotlighting on the adjacent colored wall areas.

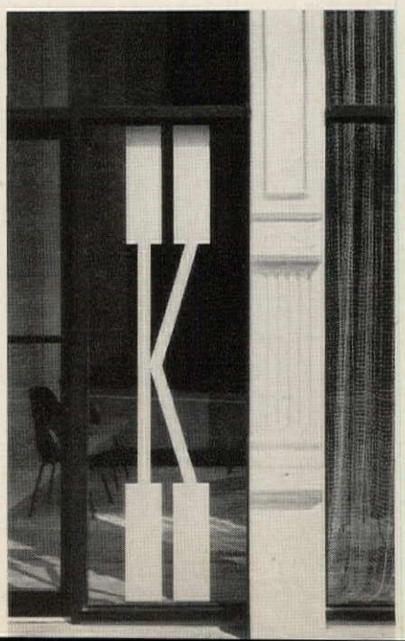
With the spread of showrooms across the world, one new problem has been to give the line a proper setting in such diverse locations as a negatively remodeled *palazzo* in Milan, a spanking new shopping center for the decorative arts in Dallas, and an abandoned newspaper plant in Jackson Square, San Francisco.

The familiar Knoll elements—the clear and independent identity of structure and color and texture; the sense of space lightly held and partially closed; and the display of furniture by islands in a big room—are all here. But even more, these showrooms have something new in the wider range and subtler variation of color; in the folded triangles of abstract clouds hung free of ceiling and walls; in the quiet nuances of a showroom's remembered past.



PHOTOS : MORLEY BAER

**Old mill-framed structure** and brick party walls of San Francisco showroom were painted white and left at that. The "shoe box" volume of the room was cut to workable proportions by introducing a balcony which almost seems to float through the midsection of the building. The stair at right rear is set in an open well in the center of the balcony area. The balcony framing was connected to the old structure at the inner face of the columns, leaving an open slit for lighting fixtures. The space modulating colored inserts ride completely free of the crossed bar timber frame. This background provides an effective contrast to the benign and patrician elegance of Mies van der Rohe's Barcelona chairs. In the design of the showrooms, Florence Knoll was assisted by Planning Unit members Lewis Butler & Heino Orro.



# Architecture as Space

Bruno Zevi's new book brilliantly states a theory of architectural space and measures the monuments of history by it —a book review

*Architect, planner, teacher, spokesman from Italy for the entire world of modern architecture, Bruno Zevi advances a thesis that has been sought for and almost expressed by a number of contemporary critics. His uniqueness is that it is he who has finally proposed the theory, and illustrated it aptly.*

*"The façade and walls of a house, church or palace, no matter how beautiful they may be, are only the container;" Zevi says,* "the subject is the internal space."

*Tracing the attempts of cubist painters and time-space theorists to define the more-than-three-dimensional landscape we live in, he concludes that it is only through a new awareness of space that the true definition can be realized. And, conversely, he concludes that architecture may only achieve its artistic mission when it expresses man moving through space, when it creates a proper environment for human dynamism. And, pushing his conclusions into competition with established artistic theories, he begins his examination of historic architecture with a look at the early Christian Church. Excerpts of this section of the book follow:*

In the name of humanity the Christians brought about a functional revolution in space. They had to select the forms of their temple from the lexicon of Hellenistic and Roman architecture. But they selected from the two preceding styles only those elements of which they could make vital use, marrying in their churches the human scale of the Greeks with the Romans' consciousness of interior space.

The Christian church was not a mysterious edifice which concealed the simulacrum of a god; it was not even the house of God; but rather a place of congregation, of communion, of prayer. It was logical, then, that the Christians would turn to the Roman basilica rather than to the Greek temple, because it was the basilica that represented the social, congregational theme of building. It is also natural that they tended to reduce the proportions of the Roman basilica, because a religion of introspection and love called for a humanly conceived setting, created in the scale of those it was designed to receive and elevate spiritually. This was their quantitative or dimensional revolution in architecture. The spatial revolution consisted in ordering all elements in terms of man's path inside the church.

The dynamic Christian achievement was evident

ARCHITECTURE AS SPACE: *How to look at Architecture.* By Bruno Zevi. Translated by Milton Gendel. Published by Horizon Press Inc., 220 W. 42nd St., New York. 288 pp. Illus. $7.50

equally in basilica churches and in buildings planned around a single center. We may compare the Pantheon, that monument of Roman decadence (like the splendid edifice called the Temple of Minerva Medica), with the Mausoleum of S. Costanza, built in 330 A.D., and find an illustration of this spatial development (see illustrations). The space of the Pantheon is static, uniformly centralized, without contrasts of light and shade, and limited by enormously massive walls. When the empire was on the wane, when Roman philosophical thought became less extroverted and activistic, and more introspective, when Roman civilization not only had been carried to the most distant shores of the ancient world, but also had taken in elements of Oriental sensibility, the Temple of Minerva Medica came into being. Then, in direct opposition to the preceding static concept, it expanded space into imposing dark niches, enriching the space with atmospheric motifs. But S. Costanza, breaking through the great niches of Minerva Medica and adding a central circular unit, created a new spatial articulation, a dialectic of light and shade. While in Minerva Medica the wall construction had merely been modified, here the design characterized the space in which man was to move. It was a denial of the Roman sense of static gravity. It substituted for the walls a range of marvelous paired columns which indicated to the observer, from every point of the surrounding ring, the center of the building. It is unnecessary to move around in the Pantheon, because it is a clearly defined and elementary space, taken in at first sight. Despite the variety of its structure, the Temple of Minerva Medica also does not require the observer to move around inside it. But in S. Costanza, an abundance of paths created for man, a plurality of directional indications repeated all around the space, demonstrate a new Christian achievement.

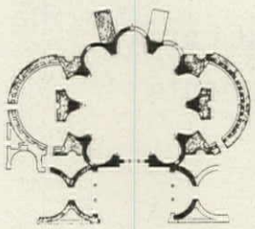
## Byzantine space

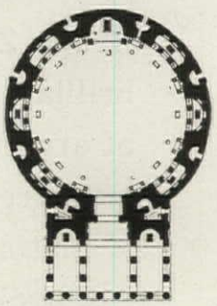
The dynamic theme of early Christian churches was exalted and carried to the extreme of its potentialities in the Byzantine period.

In buildings planned around a center, particularly in the great Justinian triad of SS. Sergius and Bacchus, Hagia Sophia in Constantinople and S. Vitale in Ravenna, the conception of space was basically the same as in the longitudinally oriented basilica. But whereas vertical relationships were nullified in longitudinal churches and directional rhythm was accelerated to seemingly hallucinatory swiftness, in buildings of a central plan, space was agitated into rapid currents and expanded to far distances.



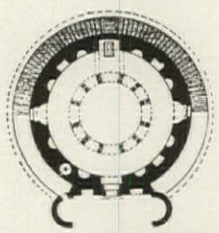
*Pantheon, Rome*
*(27 B.C.; reconstructed 115-25 A.D.)*





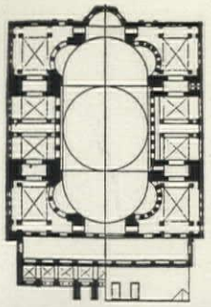


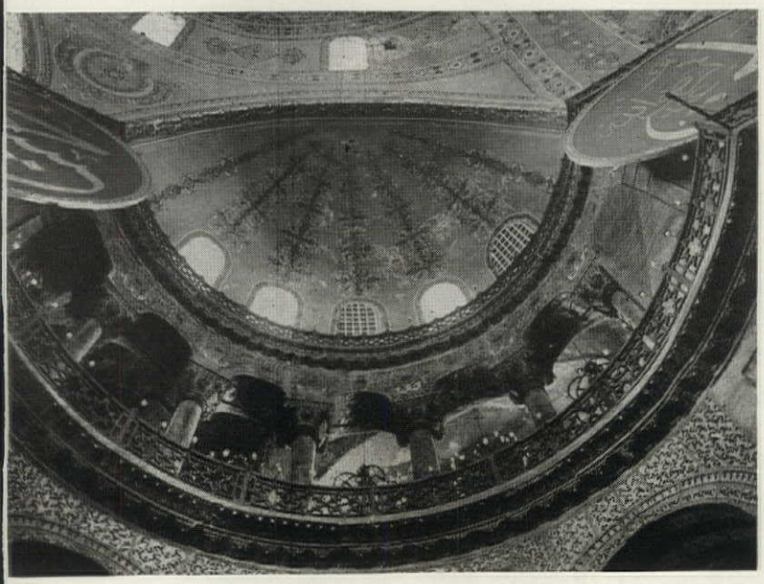
*Temple of Minerva Medica, Rome*
*(Third Century A.D.)*



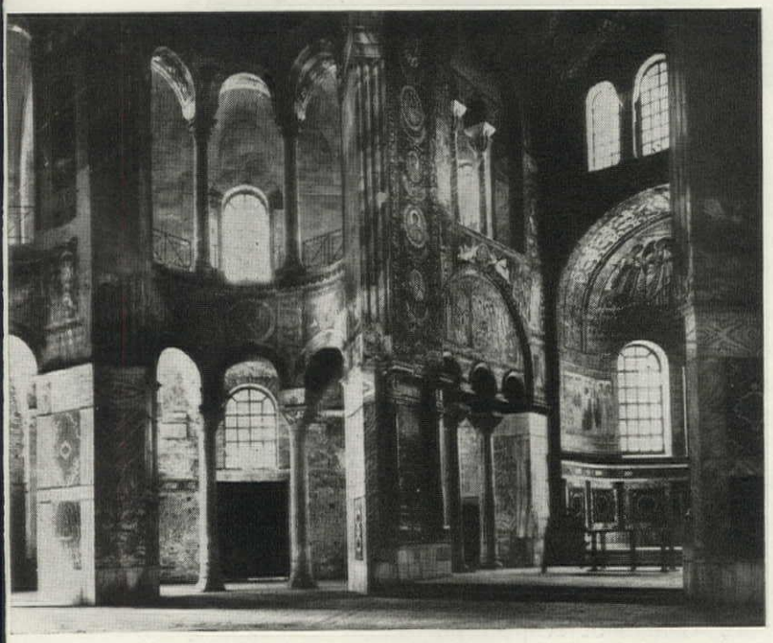
*Mausoleum of Santa Costanza, Rome (c. 350)*



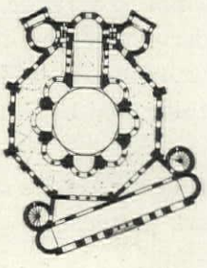




*Hagia Sofia, Constantinople (completed 537)*



*San Vitale, Ravenna (530 to 547)*



What do we mean by expanded? Glancing at the plan and pictures of Hagia Sophia (left), you will note its characteristically Byzantine configuration of enormous, semicircular, barrel vaults. Starting from two fixed points in the principal area, the wall surface seems to flee from the center of the building, as if thrown outward in an elastic, centrifugal movement which opens, rarefies and expands the interior space. Even in S. Vitale, where a Latin sense of construction offers the resistance of eight robust pilasters to the soaring Neo-Platonic quality of the Eastern church, the entire spatial intent consists in expanding the octagon, denying its geometrically closed and easily apprehended form, and amplifying it indefinitely. By covering the walls with mosaics, the counterpoint of weight and support is denied, the shining and scintillating wall becomes a mantle of thin, delicate, surface material, sensitized by the propulsions and pressures of an interior space which is achieving its own concreteness in multiple bursts.

In connection with the so-called Roman decadence, we have observed the Temple of Minerva Medica, which, in a psychologically tormented outburst, breaks the classical scheme with its expansiveness. But Byzantine space is free of this kind of drama; rather than a balancing-out of contradictory tendencies, it is the product of a new, self-confident inspiration, which is consonant with its unhesitating, dogmatic and abstract spirituality.

## Expressive contrasts

Furthermore, comparing the early Christian S. Costanza with the Byzantine S. Vitale, it is easy to show that these two kinds of space are not only different but opposed. We have shown how in S. Costanza the directional lines of perspective indicate the center of the building to the eye of the observer walking in the encircling gallery; this constitutes a centripetal motif which is clearly antithetical to the centrifugal forces of Byzantine space. And when the observer passes to the inner part of the circular space of S. Costanza, sections of radial stonework mark his passage from a luminous zone to a surrounding, enveloping, atmospheric mass. An invitation of this sort is entirely foreign to the Byzantine conception, where the wall surface itself yields and moves away from the center in concave forms, propelled more and more toward the outside, toward the peripheral space.

A period in the history of space conceptions which produces monuments of this stature cannot be considered as a mere appendix to any preceding one. It bears a new message which, despite all changes of taste and philosophy, struggles to survive throughout time.

# Roofscape: the fifth facade



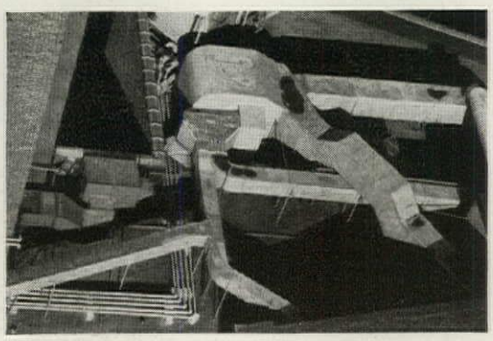
PHOTOS: GORDON PARKS—LIFE; (OPP. P.) REYNOLDS CO. BY ROTKIN

Mechanical barnacles of many types have overgrown cities since Cézanne and other French painters first looked down on the gray rooftops of Paris and translated them on canvas. Today, viewed from train and highway, the animate exhausts on factory tops make their impact on the sky itself. From the air, roofs become another facade. At 6,000′ everything below looks wondrous, but in descent the romance can get dreary. The clutter and fun of an open attic turns into a blowzy high-level back yard as seen from the building next door. In the older, simpler days, plumbing vents could nestle discreetly behind a raised-up false front (tacked on for street-level impression). But as cities compressed tighter and taller, and economics and technology made demands on space, more and bigger things got squeezed out on top. Some new structures, reflecting the designers' twinge of respect for buildings as sculptural shapes, do attempt to arrange the motley tanks, towers and turrets in an orderly way and then throw polite screens around the hulky forms. Industry, being less formal about it, does its necessary breathing and belching through exposed exhausts and stacks (opp. p.).

Here is a gallery of industrial and city roofscapes selected for their contrast in kinetic and patchwork patterns.

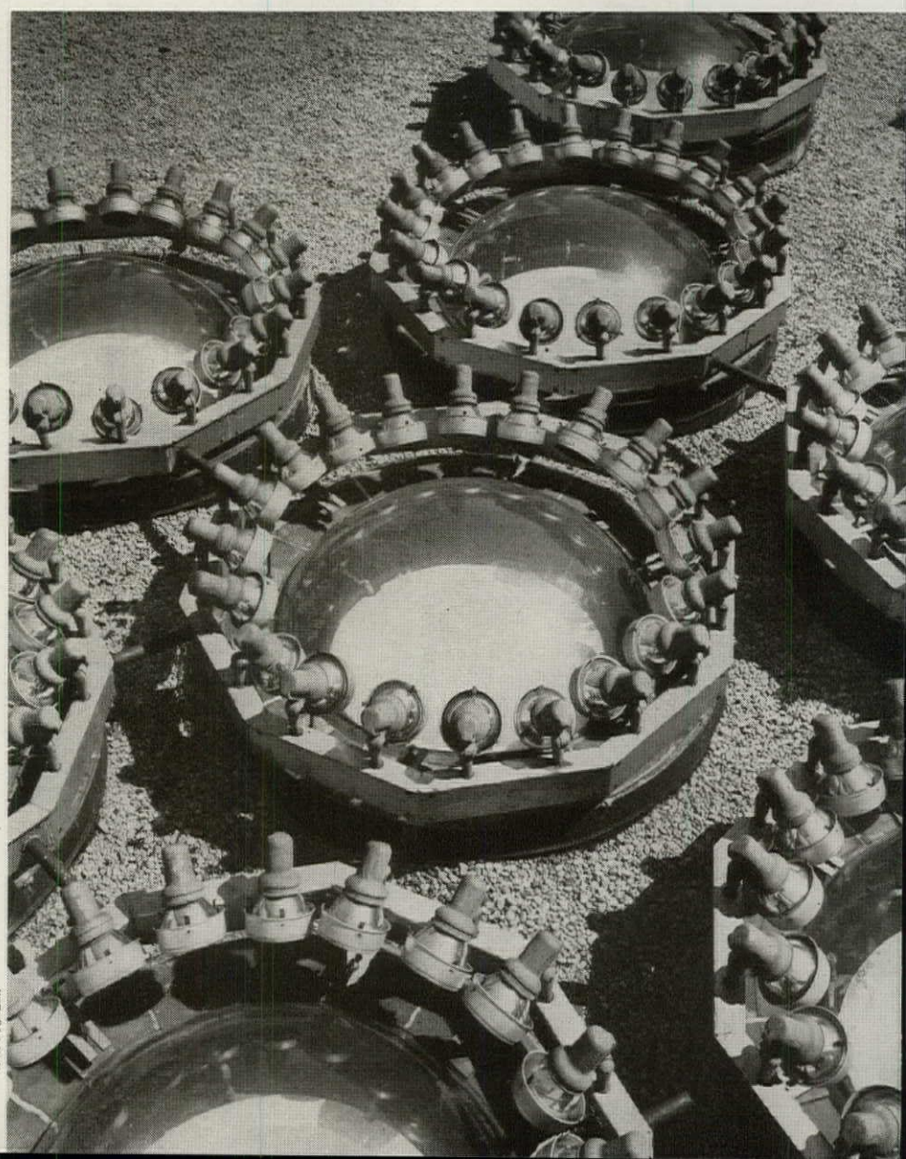
PHOTOS: (ABOVE & BELOW) TED TESSLER

*Functional apparatus poke dignity of fashionable Manhattan brownstones.*



*Preying ductwork is movie house concession to being 20° cooler inside.*

*Floodlamp coronets on skylight domes show skepticism for Madison Ave. sunpower.*

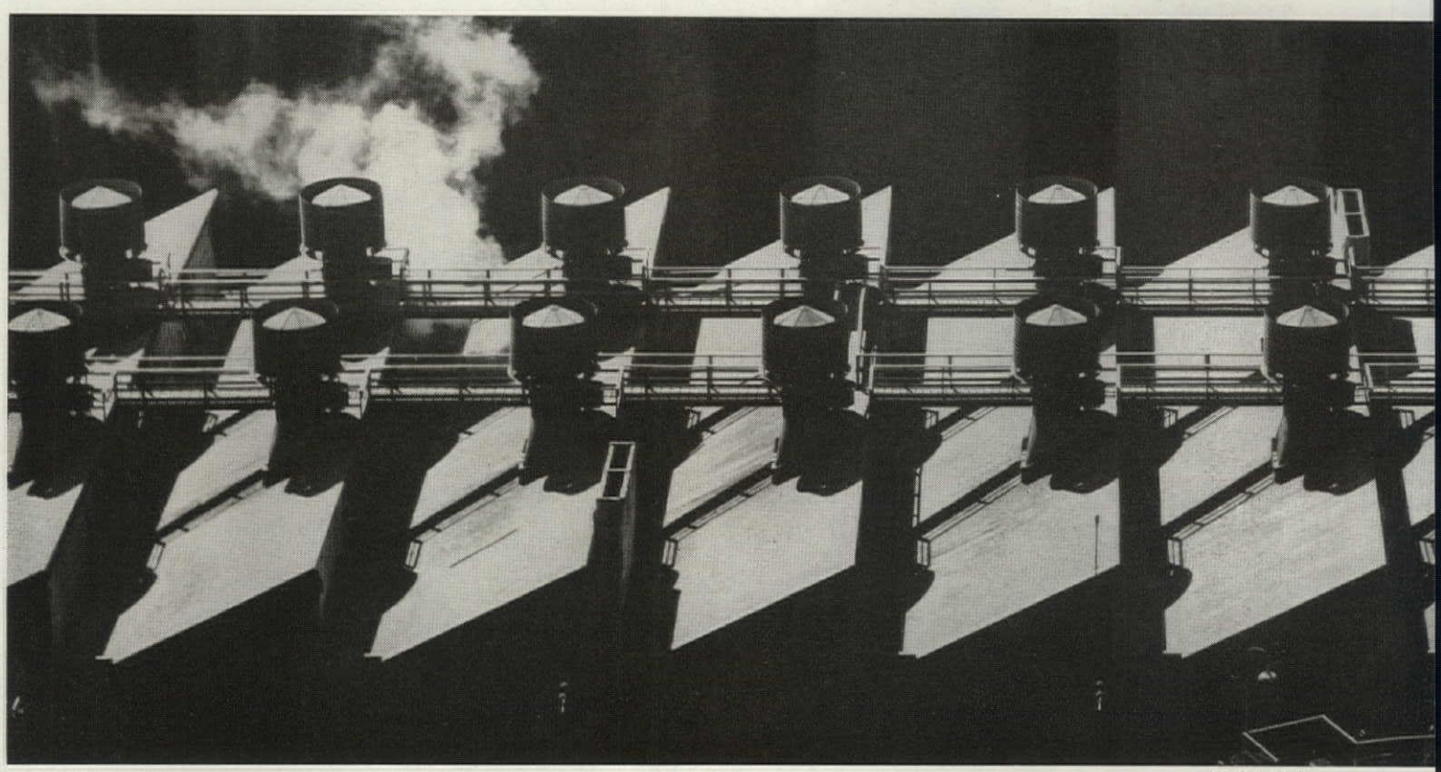


© ZOA STOLLER



TED TESSLER

*Stunted forest of paint storage tanks and exhausts grows on top of auto assembly plant.*



ROTKIN, P.F.I.

*Industrial sawtooth capped with bold blowers tirelessly marks time.*

*French quarter of New Orleans*
*wears a relaxed charm*
*in its rooftop chiaroscuro.*



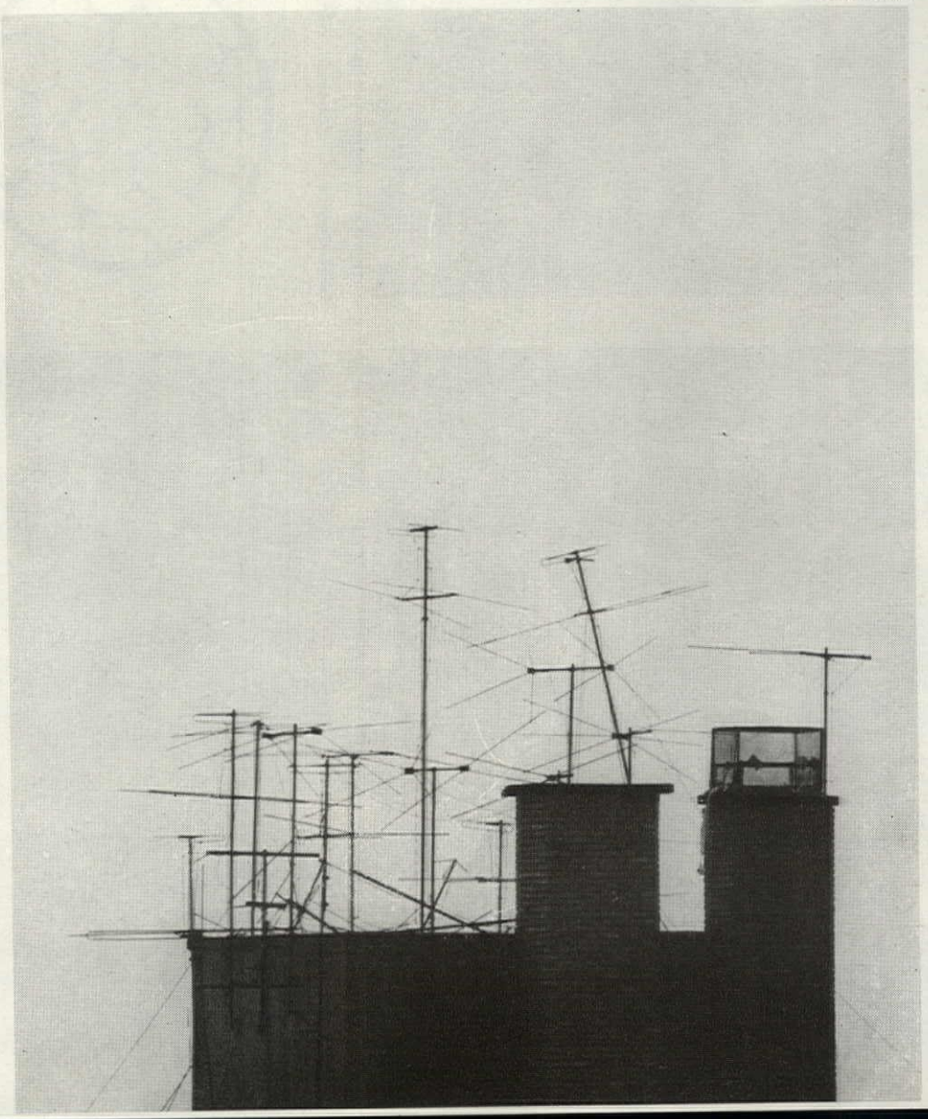
STANDARD OIL OF N. J. BY ROTKIN

ROTKIN, P.F.I.

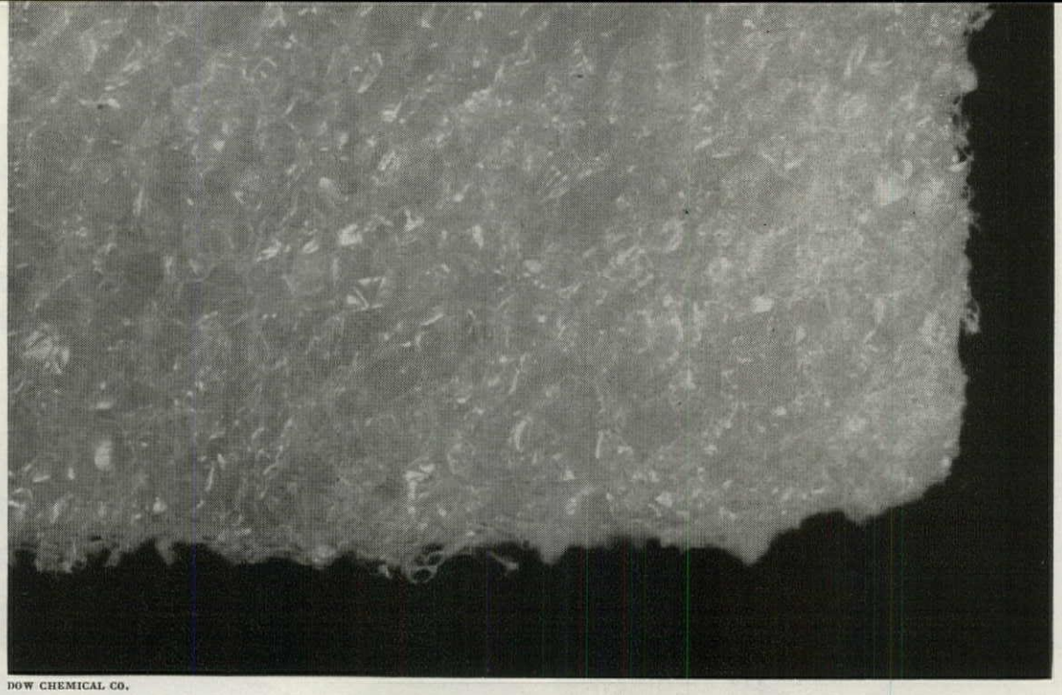


*Regimental bow ties give vent to controlled aluminum reduction process going on below.*

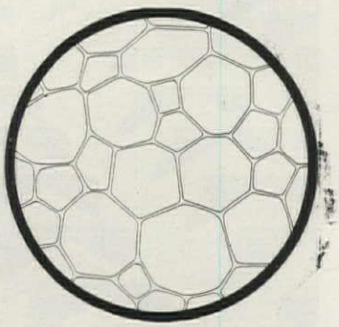
MARTIN HARRIS



*Metal nettles are latest of technology's contributions to building topsides.*

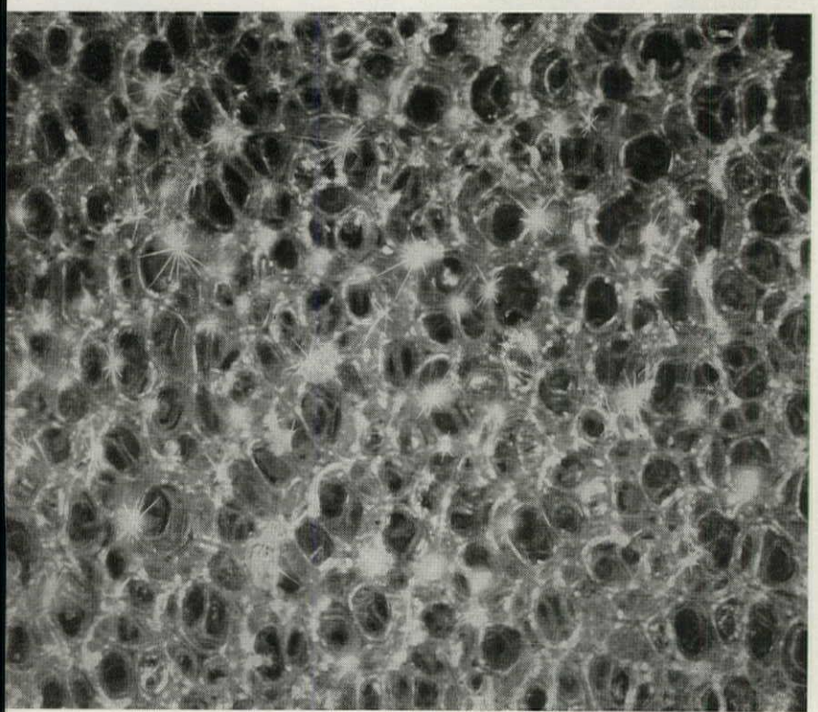


DOW CHEMICAL CO.

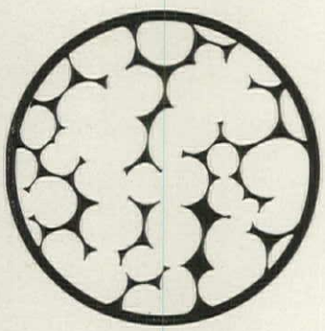


### Closed cell

Foams have three basic structures. The closed cell or soap-bubble type, shown above in polystyrene, transmits little heat or moisture through sealed pockets, hence makes a good insulator and vapor barrier. Tight polyhedral bubbles make for strength.



DAYTON RUBBER CO.



### Open cell

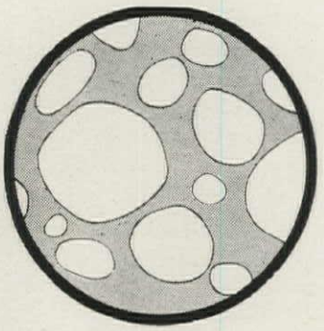
The connected cell or sponge type, shown left in new urethane, generally forms rubber-like foams, but also comes in rigid form. Its structural virtue is that, unlike closed cells, it absorbs shock and sound, and it also makes a good acoustical material.



BAKELITE CO.

### Syntactic

The newest of foams' structural types is formed by mixing tiny hollow spheres in a binding resin, shown in this phenolic sphere and polyester syntactic foam. Spherical cell shape gives the highest strength-to-weight ratio of all plastic foams.



Chemistry brings forth a new class of foam constructions of growing importance to building. They range from froths as light as seafoam to foams as solid as concrete

# Foams: a new material

Foam plastics are frothing up at such a rate that they must be considered as a versatile and entirely new class of construction materials. By 1960, it is estimated, foams will be in production at the rate of 300 million lb. a year, which, considering the dispersed nature of the material, is a lot of foam. Some 15 to 25% of this, depending on the speed with which foams are accepted, will go into direct structural and insulating uses in building.

By last count there are some ten different families of plastic foams, each with dozens of formulations and shadings of properties. They range in densities from a feather-light 1 lb. per cu. ft. up to 60 lb., and in qualities from materials as flexible and resilient as foam rubber to foams as rigid as coral, and all stages in between. They come in unicellular types (air or gas bubbles completely separated and unconnected, making them structurally strong, good thermal insulators, permeable to sound but not to moisture) and in interconnected cell or sponge formations (nonstructural, permeable to moisture but good sound absorbers) and in varying combinations of both. Altogether, the foams represent a fascinating group of new chemical and architectural materials, just at the beginning of development.

Like all such chemical creations, the plastic foams have their antecedents in nature and in art. There is nothing essentially new about foam structures. They go back, as one enthusiastic proponent points out, well before Aphrodite's rising from the seafoam. Wood is, in fact, a cellular foam built of cellulose. Bread is one of the oldest of man-made foams, made moreover by a chemical reaction quite similar to that used in making many plastic foams. Perhaps the nearest thing to the plastic foams of synthetic chemistry is a froth exuded by the nymphs of several insects, known as spittle insects. This is the so-called "cuckoo spit" or gleaming white globs of foam found on meadow plants in the spring. Under it the nymph lives for weeks, protected from the sun, heat and rain by its mysterious, airy castle.

But chemistry's new foams go well beyond nature's "cuckoo spit" in variety and permanence. They provide strong reinforcing cores in jet aircraft cavities, radomes and boat hulls. They form crash-padding, upholstery and insulation in automobiles, aircraft and other vehicles. They serve as vibration-damping materials, filters, packaging, pipe insulation, potting for electronic gear and as structural insulation in plastic sandwich panels for refrigerators. In building, where the problems are always intricate, foams have been more of a glittering promise than a reality for nearly a decade. But developments are stirring.

Whether the new materials can compete with the host of older, low-cost fibrous and granular insulating materials will depend on how speedily it is understood that the foams go beyond these in combining structural and insulating properties with new fabrication techniques in a challenge to imaginative building and architecture.

### Skimming the foams

The first step in understanding is the materials themselves and how they are arrived at. Foams are broadly formed in three ways: by mechanical whipping, as in beating a meringue; by chemical reaction in which the mixed ingredients themselves give off steam or gas to form a raised cellular structure, as in bread baking; and by addition of chemical "blowing" agents, which upon contact or heating release nitrogen gas to bubble through the mix. The setting of the foam depends on which of the two broad categories of plastics is being used: the thermoplastic, which hardens on cooling, or the thermosetting, which sets on heating. Some of the foam reactions go extremely fast, in a twinkling raising the resins from two to 300 times their original volume. Close control of ingredients, catalysts, agents and reaction times controls the density and uniformity of the bubble structure. Since properties vary with ingredients, density and type of bubble formation, and these may be varied widely, the result is an enormous range of materials tailorable to specific uses.

The ten species of synthetic foams now available do not represent the end of the development. Each has its variable family characteristics, possible

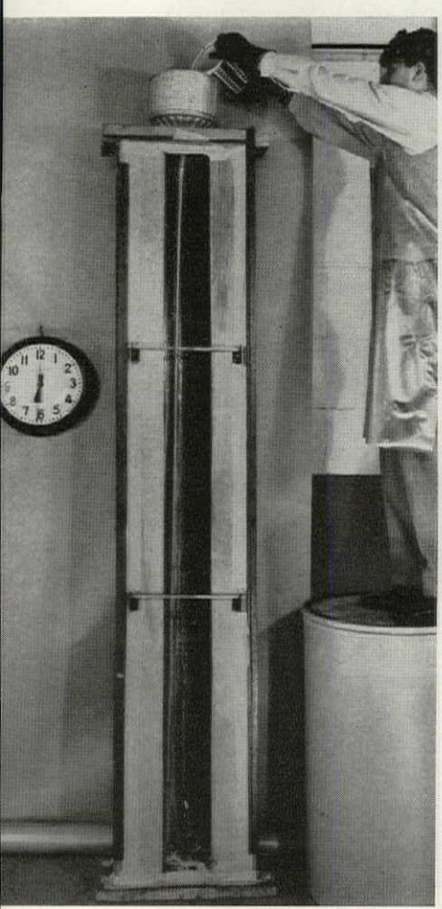
combinations. The foams most significant to building thus far are:

*Polystyrenes.* First of the rigid foams, invented in Sweden some 25 years ago and introduced here just before the war by Dow Chemical Co., basic producer of styrene, one of the chemicals out of the Pandora's box of coal, oil and natural gas, as are most of the plastics. A seafoam-white material, closed cell, whose outstanding qualities are lightness (1.3 to 2 lb. per cu. ft.), high insulation value (K factor equal or superior to conventional board insulation), impermeability to water. Disadvantages are flammability (though a self-extinguishing type is now made), poor acoustical qualities (due largely to the reflective, glassy nature of the plastic). It is supplied mainly in preformed sheets, planks and boards, but a new form is available in tiny granules which can be expanded and fused in molds or extrusion presses. First used as freezer insulation, styrene foam is the most widely used core in sandwich panels, is moving briskly into masonry homes as combined insulation and plaster base for walls, perimeters. At about 12¢ a bd. ft., it is the largest volume rigid foam in sales.

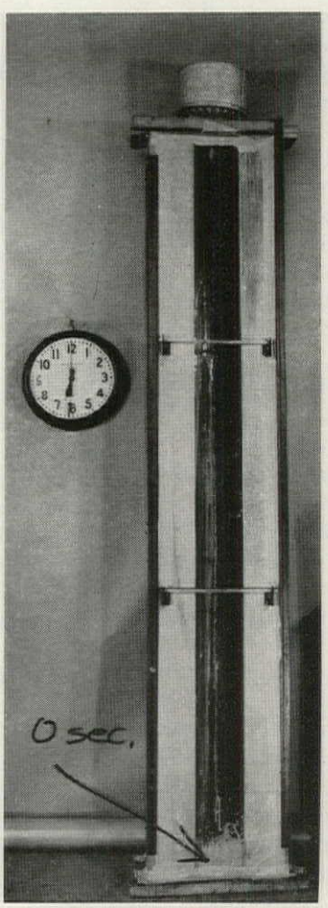
*Glass foam.* Not generally included among the foams, this material is as indubitably a synthetic and a plastic as is glass. Formed by the air-pressure expansion of molten glass to about 15 times its normal volume, Foamglas was developed by Pittsburgh Corning Corp. as a complementary product to its Fiberglas. A rigid, closed cell, highly inert inorganic foam, its chief virtues are great strength (7 tons per sq. ft. compressive strength), lightweight (9 lb. per cu. ft.), good insulation factor, total incombustibility and imperviousness to moisture. Chief drawbacks: low acoustical absorption, available only in preformed blocks and a few special shapes. Increasingly used for roofs, core walls and linings, perimeters and as fireproof backup behind curtain walls.

*Vinyls.* Probably the largest family of plastics, both in number and volume. Foams from these materials may be open or closed cell, flexible or rigid or anything in between. Most volume thus far is in flexible rubberlike forms—closed-cell for flotation and insulation equipment, open-celled for cushioning and safety-padding—but the more rigid types have a potential in building. Family characteristics: lightweight density range (5 to 30 lb. per cu. ft.), good thermal and acoustical insulation properties, easily heat-sealed to itself or other materials, outstanding resistance to sun and moisture (in solid films used as a vapor-barrier). Disadvantages: will burn, but is self-extinguishing in most types; has narrow workable temperature range, stiffening below 20° F. and softening above 150° F., which producers are seeking to improve. Largest potential in the vinyls is their ability to be foamed in composite structures, as both heat and sound insulation, for instance, or in combination with other materials, as seen in new asbestos-concrete siding and a new vinyl-clad steel curtain wall.

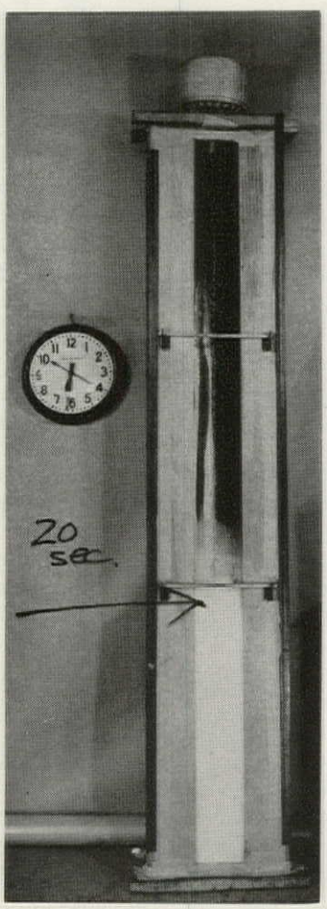
*Phenolics.* The first and oldest of thermosetting plastics, discovered by Dr. Leo H. Baekeland in 1909 and still known as the brown-and-black workhorse of the industry, only recently has come forward as a foam. It comes from a reaction of phenol (carbolic acid) with formaldehyde, and its prime characteristics are low cost (about 30¢ a lb. for base materials), lightweight



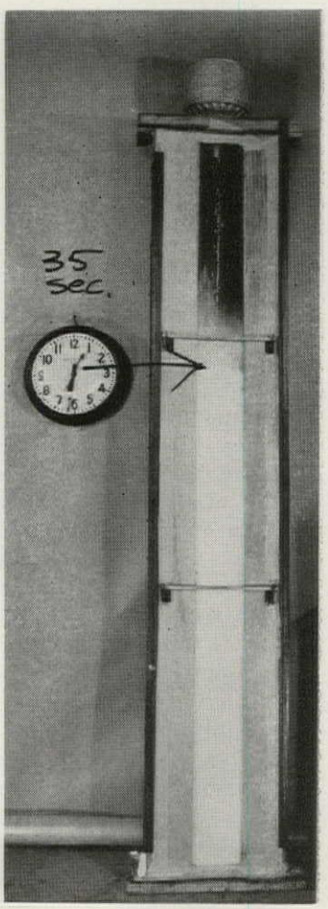
**Foaming-in-place:** A new phenolic foam formulation, developed by the Bakelite Co., is poured into 8'-tall wall cavity.




The foaming reaction starts in about 40 seconds, or almost as soon as it hits bottom of wall cavity (volume: 4.3 cu. ft.).




Once reaction starts, phenol combines with formaldehyde, aided by acid accelerator, almost with explosive force.

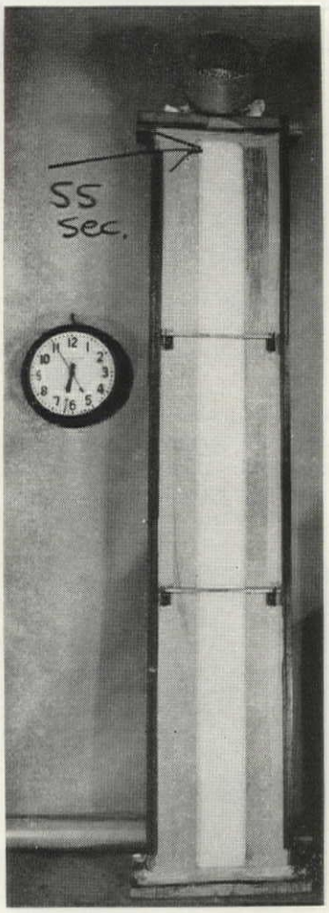



The reaction gives off heat and steam, which foams the material up the cavity, setting or hardening the foam as it goes.

(from about ⅓ lb. to 25 lb. per cu. ft.), high stability and heat resistance up to 250° F., and noncombustibility. Foaming produces a composite structure, about 40 to 60% open and closed cells, hence the foam is a good thermal insulator with some acoustical insulating properties as well. Disadvantages: rather brittle; only fair mechanical strength; permeable to moisture, requiring a sealer or vapor barrier. First uses were as bouyant fillers in Navy craft, lightweight packaging material, but phenolics are moving in as core structures in sandwich panels, more ambitious structural uses (see below).

*Urethanes.* Newest, most versatile of plastics, embracing dozens of types, primarily foams, flexible, rigid and semirigid, in both cellular forms. Stumbled upon in Germany in an effort to get around US nylon patents, these plastics involve a similar reaction—bifunctional acids (diisocyanates) with glycols (polyesters)—to different ends. DuPont first produced the basic materials in the US in 1953, followed by other basic chemical producers. Leading properties: high strength, toughness, abrasion resistance (compressive strength up to 800 to 1,000 lb. per sq. in. or psi at densities of 16 to 20 lb. per cu. ft.); high thermal insulation value (equal to the most efficient commercial insulation); good sound absorption in low-density, open-cell structures; remarkable adhesion to wood, metal, glass, fabrics, other plastics. Disadvantages: comparative high cost (55 to 85¢ a lb. raw materials), but cost is being reduced by substituting polyethers for polyesters; flammable, but self-extinguishing. Chief structural uses so far are in cores for aircraft wing and tail cavities, railroad car subflooring and sheating, where the urethanes' high strength, exceeding that of all other plastics and rubbers, indicates its potential in sandwich constructions and rigid, self-supporting lightweight assemblies.

Other plastic foams impinge on the building and construction field, but in a more minor way. There are, for instance, a group of cellulose acetate foams with high shock and abrasion resistance, good heat resistance (up to 350° F.), which are moving into some panel constructions, and a group of polyethylene foams whose main use thus far is as electrical, wire and cable insulation. In addition, there are a number of high-priced, specialized foams which, as their prices are reduced, may move significantly into building. These include silicone foams, which have the highest heat resistance of all foamed plastics (up to 700° F.); urea foams, which produce the lightest of all foams (0.8 lb. per cu. ft.); and epoxy foams, which are just beginning to emerge and have the toughness, stability and good heat resistance of this superior laminating and protective-coating resin. But the main current for the immediate future will carry the froth of polystyrenes, glass, vinyls, phenolics and urethanes.




In about 55 seconds, cavity is filled with rigid, white, insulating foam. Speed is needed to get even density of 2 lb. per cu. ft.



Phenolic foam structure, here removed, is low cost, fire-resistant. It may be foamed into walls or into prefab units.

### Stirring the foams

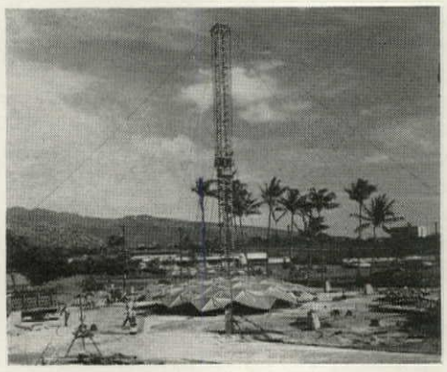
Obviously there is a great stirring in foam plastics. Basic chemical producers are in process of completing a two-year intensive study of foam properties, many on formulations so new that exact data are fragmentary or unknown. But from the start the big and still unanswered question has been how plastic foams may work into the complex building industry to make the best use of their unusual properties. Most thinkers in the field do not believe that the preformed board, plank or block type of foamed constructions, requiring more or less conventional installation into walls, offers much promise of volume growth, though such types may well get and keep a substantial market. Most plastics developers believe that for real growth the foams must take advantage of their amenability to handling by continuous chemical process techniques: to being foamed into prefabricated panels and structures or, as is possible with many types, to being foamed-in-place right on the building site.

Recently, researchers at the Bakelite Co., a division of Union Carbide and Carbon Corp., made an important advance in the prefabrication techniques and foaming-in-place of phenolic foams, significant because this material is probably the lowest cost of all the foams (4¢ a bd. ft. for 1 lb. cu. ft. density) and one of the few that is fire-resistant. It was a long development, typical of the research work that must go into something new. Chemically, the foam is formed by a reaction (with an acid catalyst as accelerator) in which the ingredients combine, releasing heat and steam that almost simultaneously puff up and set or harden the thermosetting plastic. The problem, acute in filling a tall vertical wall cavity, is to get the reaction moving fast enough so that the foam does not collapse or freeze

*continued on p. 250*

PHOTOS: WERNER STOY, HONOLULU

**Auditorium** for 1,800 people takes shape in Hawaii. Mast, at right, supports structure as it grows to full size. Mast is removed when all panels are in place.



**1** Dome's crest is formed on ground



**2** More panels attach as crest is hoisted

**Outside skeleton** makes this dome different. Each panel carries an aluminum strut. As panels link, struts and joints provide strength. Traditional dome has skeleton plus panel skin.



**3** At end of day dome takes shape





**Dome designer** Don LaRue, at left, uses ten panel sizes to form structure. Each panel is color coded to speed construction. Dome went up in 20 working hours.

# Aluminum dome

*Kaiser's new dome in Hawaii combines Buckminster Fuller with aircraft design. The result is a lightweight, inexpensive auditorium for 1,800 people*

The beguiling pineapple-like dome shown on these pages now graces, appropriately enough, Henry J. Kaiser's Hawaiian Village in Hawaii, where it serves as an auditorium accommodating 1,800. An all-aluminum structure, 145′ in diameter, enclosing 16,500 sq. ft., it was erected in 20 hours by a 38-man crew at a cost which would work out elsewhere to about $4 per sq. ft.

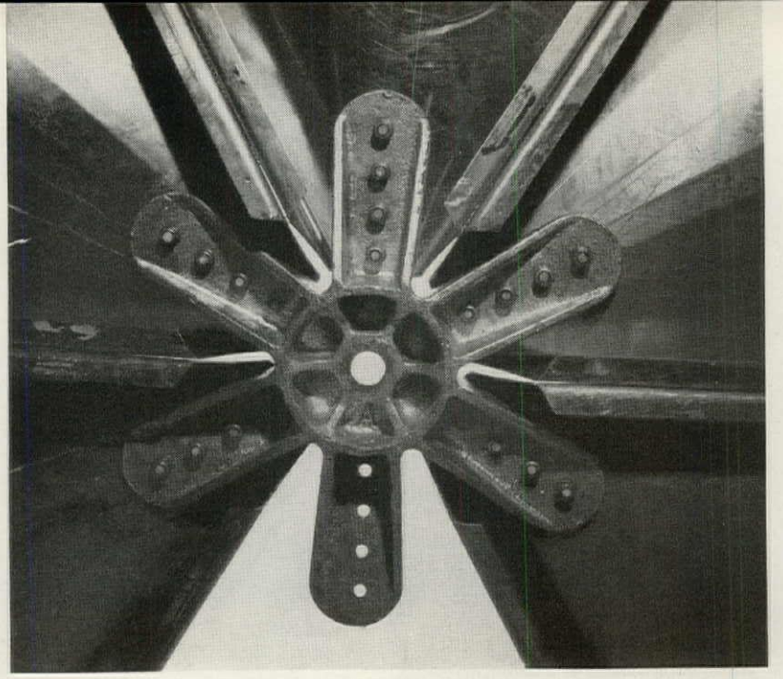
The dome was designed by engineers of the Kaiser Aluminum & Chemical Corp., under the direction of Don LaRue, an engineer whose early career training was in the aircraft industry. And the influence of aircraft design is evident in almost every phase of the structure: its aluminum stressed-skin construction; its indented panels, each braced by an aluminum strut; its light weight—39,000 lb.—less than 2½ lb. per sq. ft. of enclosed area.

Evident too is the influence of the modern-day champion of the dome, Buckminster Fuller, whose basic geodesic dome patents are observed by Kaiser. But this dome, from a short distance, looks quite different from most of those which have been designed by Fuller. For example, there is no skeleton here to which a skin is attached. The 575 edge-strengthened, strut-braced panels themselves provide the skeleton, skin and structural strength. Although unsupported, the clear-span dome can withstand loads of more than 100 lb. per sq. ft. and wind pressures twice as great as those of a hurricane.

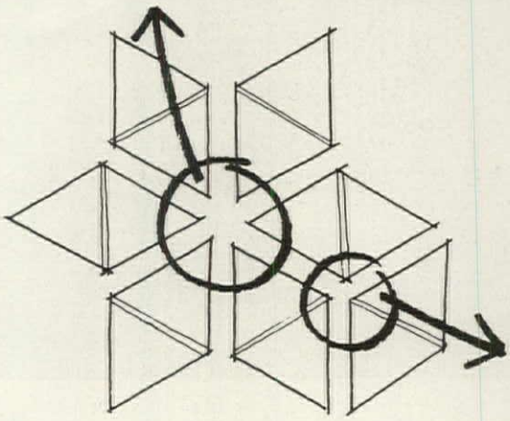
Kaiser's cost estimate of $4 per sq. ft., which includes materials, shipping and construction, would peg the cost of a dome of these dimensions at $66,000, or $36.70 per seat. New Orleans' Mayor deLesseps S. Morrison is reported to be interested in a similar, but larger dome for a 17,000-seat sports arena. Its diameter would be 400′, enclosing 125,600 sq. ft. Kaiser says that such a dome can be built.

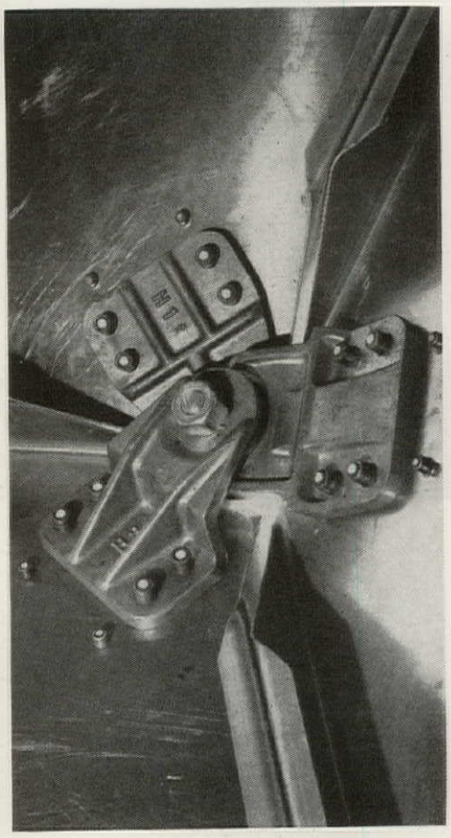
The company has hopes for such other uses as aircraft hangars, field houses, convention halls. At Ravenswood, W. Va., it will erect an aluminum-domed warehouse on the site of its new aluminum plant.

Years ago, when he began designing domes, Buckminster Fuller was told that he was an impractical thinker, because the building codes would not permit such outlandish structures. But Fuller went ahead, under the theory that the dome "would start at the north pole, where there are no codes and people just need a job done." In time, he said, the dome would work back to civilization, which, indeed, it is beginning to do.



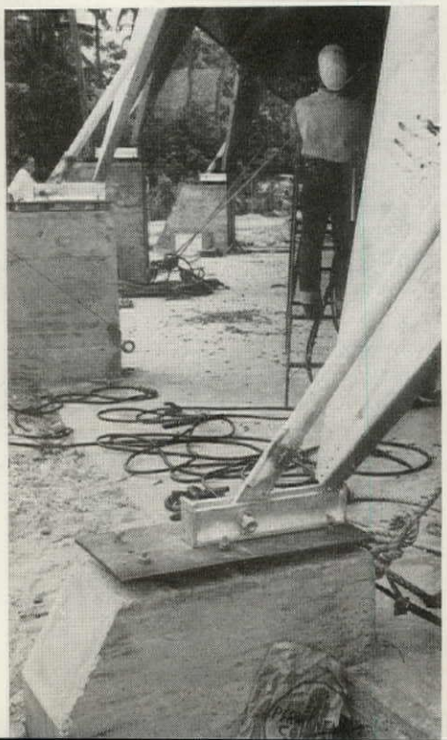
**Star-shaped** aluminum castings are bolted to dome at confluence of six panels, as sketch, below left, indicates; 175 of these are used in dome. Hub castings, picture below, are bolted at juncture of three panels. More than 1,000 hub castings were needed.





PHOTOS: WERNER STOY





**Tie-down struts** carry dome to its foundation. Dome rests on 25 concrete piers spaced around its 4,550′ circumference.

Total weight of dome is 39,000 lb., or about 2½ lb. per sq. ft. of enclosed area. Cost is about $4 per sq. ft. in place.

*Technology continued on p. 161*

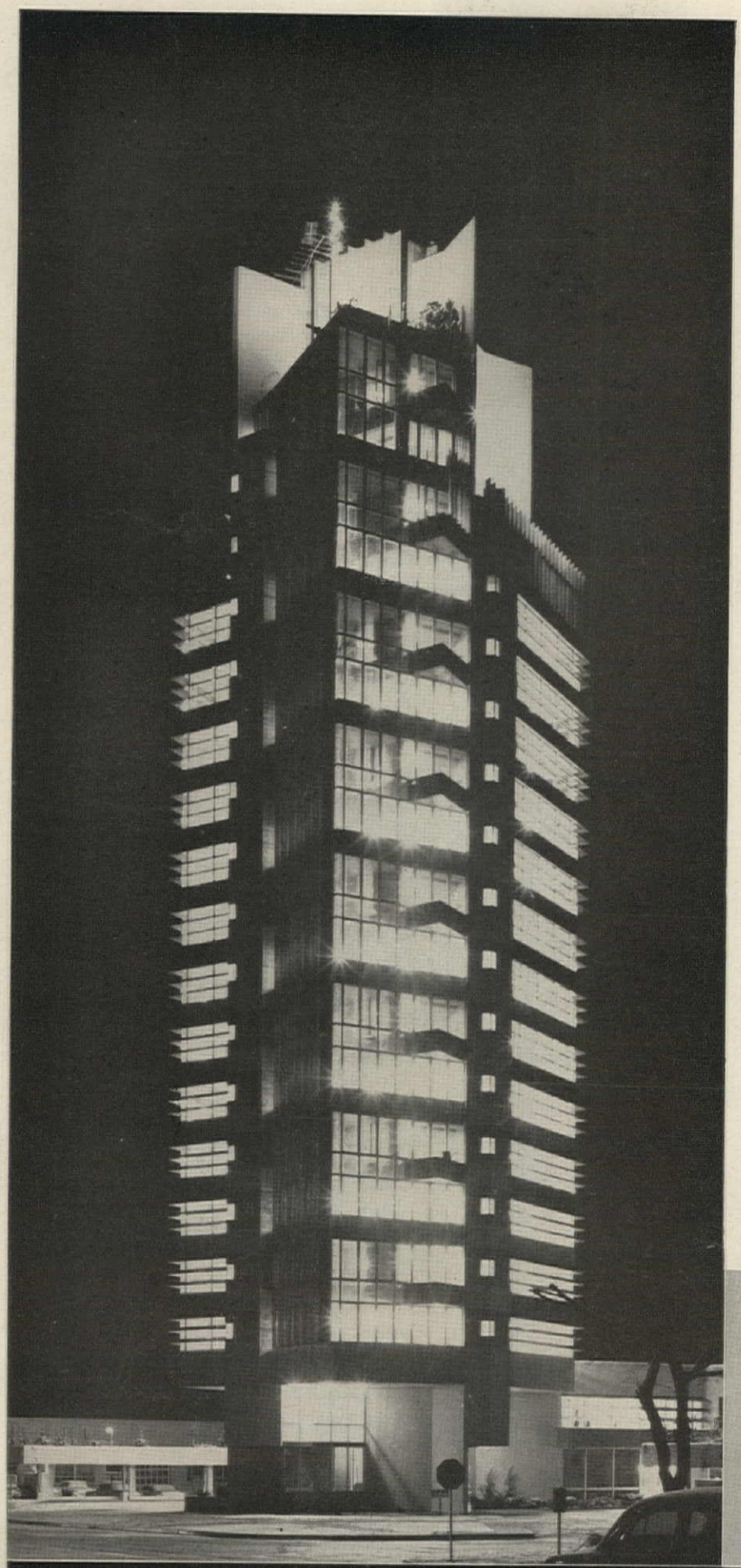


PHOTO BY JOE D. PRICE

Frank Lloyd Wright's

# PRICE TOWER

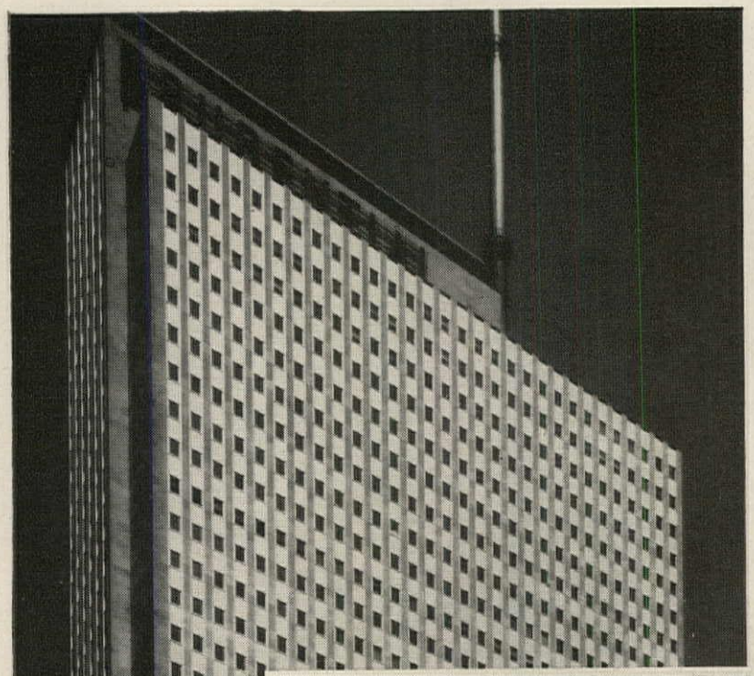
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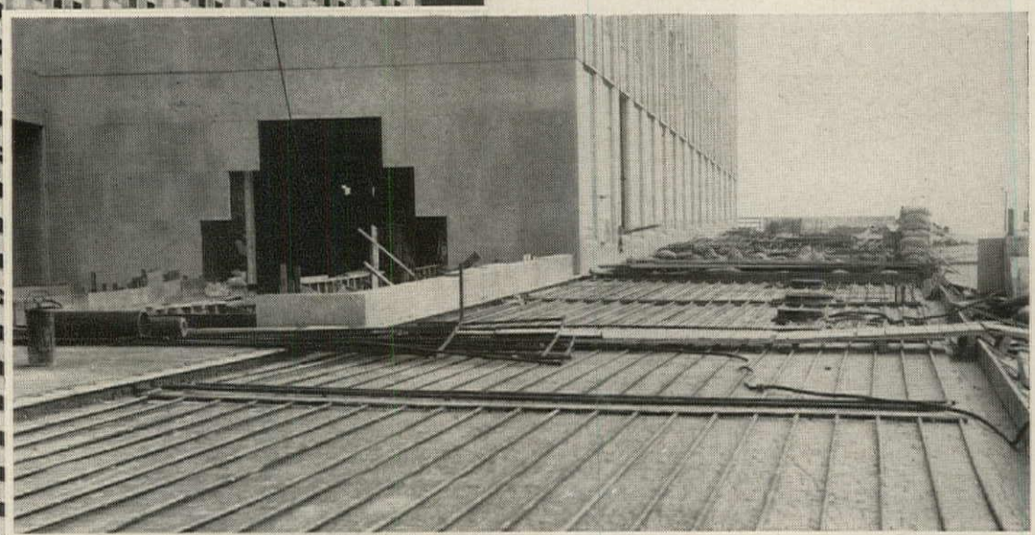


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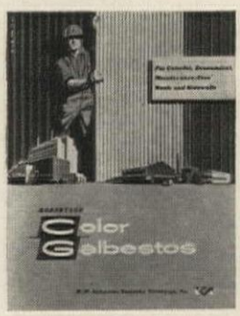
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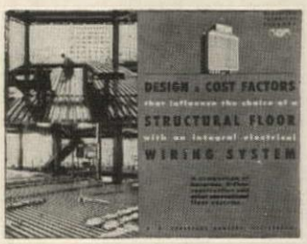

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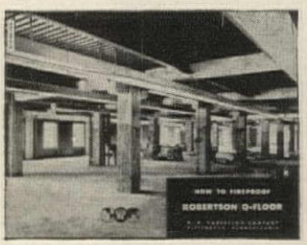

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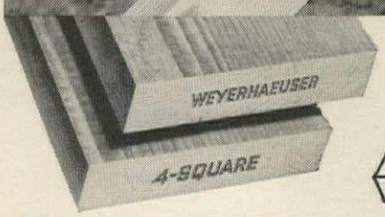
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# West Coast Hemlock

Architects and builders look for the Weyerhaeuser 4-Square brand name on Hemlock for several reasons. First, this famous trademark means that the wood has been carefully and scientifically seasoned. Kiln-drying assures greater stability, long life, and excellent finishing characteristics. Whether it is siding, framing, sheathing, flooring, or paneling, the 4-Square brand name on Hemlock means that this lumber has been manufactured with precision, accurately graded, and carefully handled and shipped.

As finish lumber, Hemlock is a beautiful, light-colored, straight-grained wood—easy to work, and relatively free from pitch pockets. These qualities make it an excellent species for both paneling and molding.

The structural advantages, beauty, and versatility of Weyerhaeuser 4-Square West Coast Hemlock Lumber explain its growing popularity among architects and builders. See this beautiful "Ability Wood" at the yard of your Weyerhaeuser 4-Square Lumber Dealer.

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# Brief accounts of noteworthy developments

### EARTHMOVING IN WINTER

Russian developments in the field of cold-weather earthmoving may aid the US construction industry's effort to boost wintertime productivity. The cold-weather research organization of the US Army Corps of Engineers, the Snow, Ice and Permafrost Research Establishment (SIPRE), whose studies relate to the construction of defense bases inside the Arctic Circle, reports a number of Soviet engineering techniques for excavating rock-hard frozen earth.

From SIPRE's information, it appears that the Russians have experimented with a variety of devices: circular saws, rams, pneumatic hammers, and drop hammers. Most effective seems to be a wedge-shaped drop hammer (with a 7° wedge), mounted on a bulldozer. Such a rig is reported to be capable of digging 5,300 cu. ft. of 3′-deep frozen earth in eight hours.

Another Russian device is a trench digger, consisting of a caterpillar chassis and two adjustable parallel booms with endless chains of 280 steel cutting teeth. The trench-digger cuts 6½′-deep parallel swaths in frozen clay at speeds of 66 to 89 ft. per hour. In frozen sandy soil, speed can be increased to 120 ft. per hour. The cutting teeth are said to last for about 2,600 ft. in frozen clay, about 3,300 ft. in frozen sand.

### FIRE TEST CENTER

The Southwest Research Institute, in San Antonio, has constructed a fire technology research building at which manufacturers of building materials may now perform research experiments aimed at developing new, more fire-safe materials. The $35,000 facility has financial backing from such companies as Celotex, Johns-Manville, Owens-Corning Fiberglas, and Rohm & Haas.

Heart of the building is a 25′ fire tunnel, in which tests will be made on interior building finishes: paints, paper, wallboard, and other materials. As a test material is exposed to flame, which sweeps down the tunnel's length under the force of rushing air, measuring devices record heat generation, smoke density, toxicity of gases developed in combustion. Scientists can watch the flame tests through windows in the tunnel. Control devices keep precise check on temperature, humidity and air movement, making it possible to simulate various fire conditions to which materials might be exposed.

### HIGH COST OF BUILDING

President H. C. Turner Jr. of Turner Construction Co., New York, points to inflation, design and labor as the cause of high costs in building. Contemporary design, he says, demands more engineering: "Engineers—structural, mechanical and electrical—are now responsible for over 50% of the design of a building."

Does design step over the line of reason when it channels 40 to 45% of total building cost to plumbing, heating, ventilating, elevators and electrical equipment? Turner thinks not. "I support those who are seeking newer, better and more attractive ways to build."

But he believes that both architects and engineers should make more use of the competent builder. He says: "Bring him into the picture as a consultant from the practical construction standpoint, to make sure that the complexities of assembly and installation have been thoroughly thought through and that the result will be achieved in the most practical and economic manner."

On labor costs, he sees little chance for economy. "Construction labor today," he says, "is less efficient and less productive than it was 20 years ago. There is not likely to be any material improvement as long as we have substantially full employment."

### ENGINEERS AT A DISCOUNT

Engineers' salaries have not kept pace with industrial workers' wages. A survey of 93,000 engineers in industry, by Engineers Joint Council, indicates that a typical engineer in mid-career earns $10,000 a year. If his salary since 1939 had followed the upswing in industrial wages, his salary today would be $16,000.

After one year's experience, the typical engineer earns $5,300. But it levels off alarmingly: after 40 years, his salary is $11,000. Only one engineer in ten earns $15,000 or more per year; few accomplish this with less than 20 years' experience.

Dr. Edward B. Peck, of Rutgers University, in an independent analysis of the data at Engineers Joint Council's annual general assembly in January, indicated that during his career the typical engineer's median salary exceeds that of the carpenter by only $1,860 per year, of the plumber by only $1,160. Concludes Dr. Peck: "This is not an attractive return on investment for an engineering education."

### WORKERS RIDE CONVEYOR

Steel workers at Weirton Steel's strip mill, in Weirton, W. Va., now ride moving sidewalks from mill floor to locker rooms, 3½ floors above. The four-ramp system, reported by Designer-builder Stephens-Adamson to be the first such application in an industrial plant, travels upward 201′, at 14° slope, to a total height of 42′. Belt speed is 132′ per minute, or about one half normal walking speed. Capacity of the 24″-wide belt is 3,600 passengers per hour. The 734 workers, average number for one shift, travel from bottom to top in 12 minutes. The belts are powered by electric motors; motion can be initiated by pushbutton or electric eye.



**PLYWOOD ARCH:** This arched plywood-and-paper-honeycomb sandwich panel, being tested under a 7,500 lb. load by Tacoma Architect Robert B. Price (in bow tie), bears four times its design load with a deflection of only 0.38″. Price will use 108 of such fir plywood panels, mounted on laminated wood girders, to span a 96′ school gymnasium ceiling in Tacoma.

# The 1957 Building Picture Features CURTAIN WALLS of

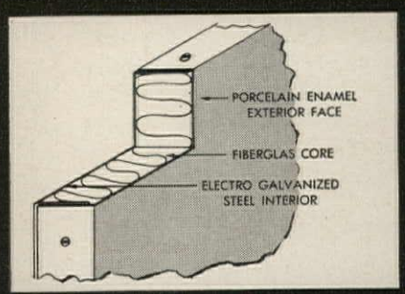
# SEAPORCLAD*

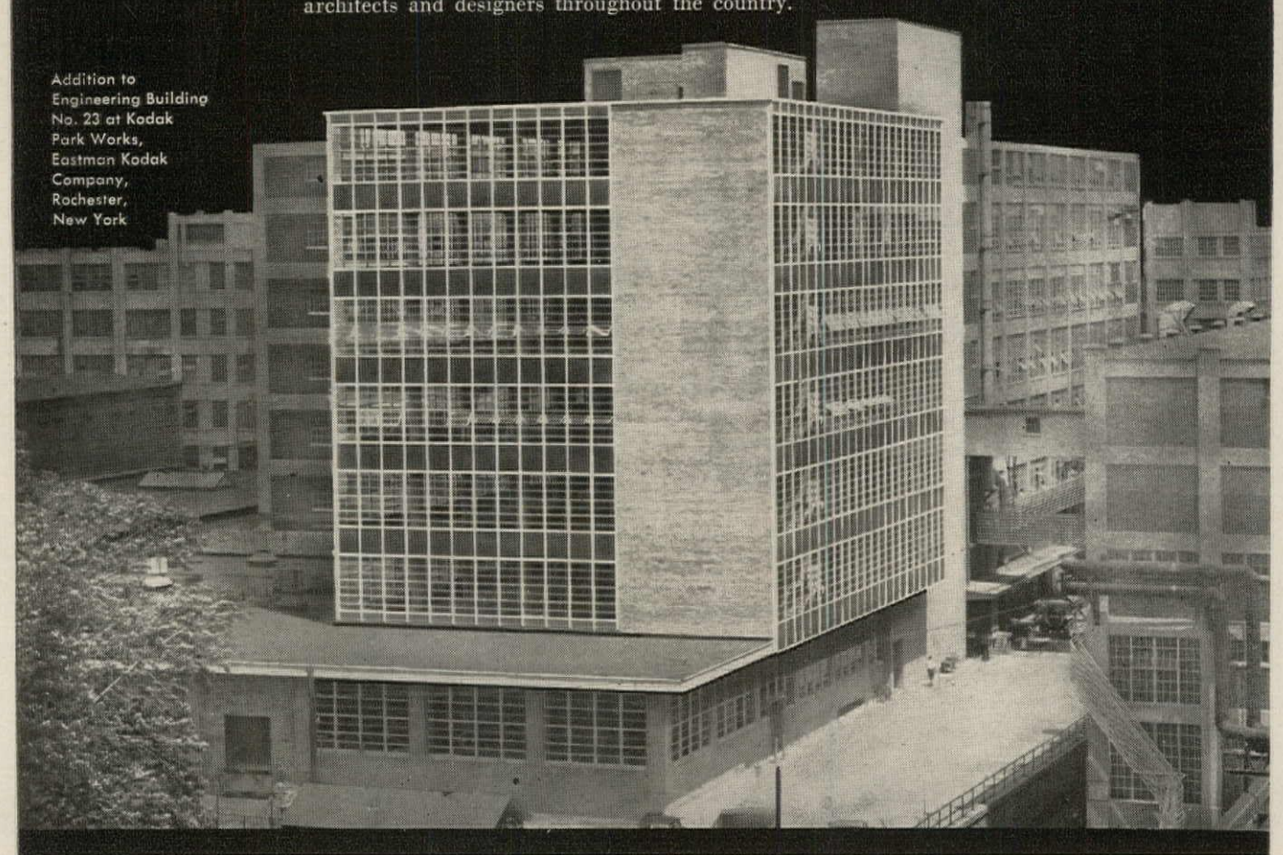
## INSULATED-LAMINATED PORCELAIN PANELS

In Rochester, New York, the exterior of this new building at Kodak Park Works of Eastman Kodak Company is faced with SEAPORCLAD.

The use of SEAPORCLAD curtain wall porcelain enamel steel panels means lasting beauty and color stability, as well as a durable product with its important maintenance economies. These thin curtain wall panels also provide increased usable interior floor area . . . so greatly needed in this expanding country-wide business era.

Curtain walls of this type can vary from ½" to 3" in thickness and thus replace brick or masonry walls of from 8" to 14" in depth. These curtain walls are light in weight, save time in erection . . . a further reason for the growing acceptance of this material by leading architects and designers throughout the country.



Addition to Engineering Building No. 23 at Kodak Park Works, Eastman Kodak Company, Rochester, New York

Write for brochure 46

SEE OUR CATALOG IN SWEET'S

SEAPORCEL METALS, INC., 2800 Borden Avenue, Long Island City 1, New York — Member: Porcelain Enamel Institute, A.F. of L. Metal Fabricating & Enameling Plant — In Canada: Seaporcel is manufactured by General Steel Wares, Ltd., London and Toronto, Ontario. Complete erection and engineering departments.

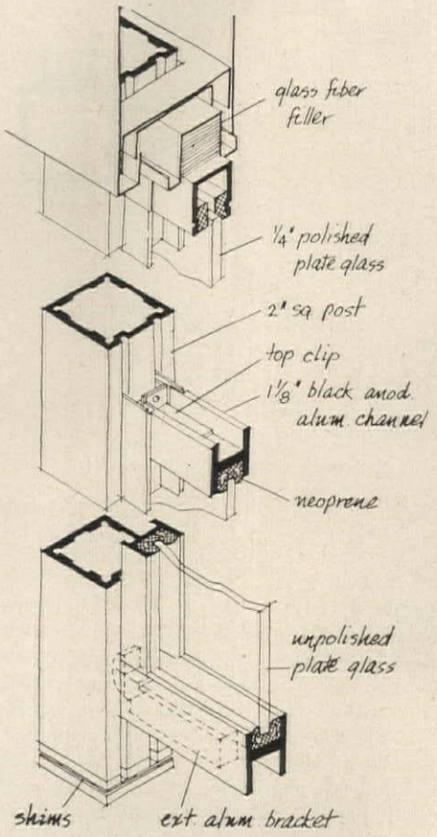
*Reg. U.S. Pat. Off

for some job somewhere you can use...

**Seaporcel**

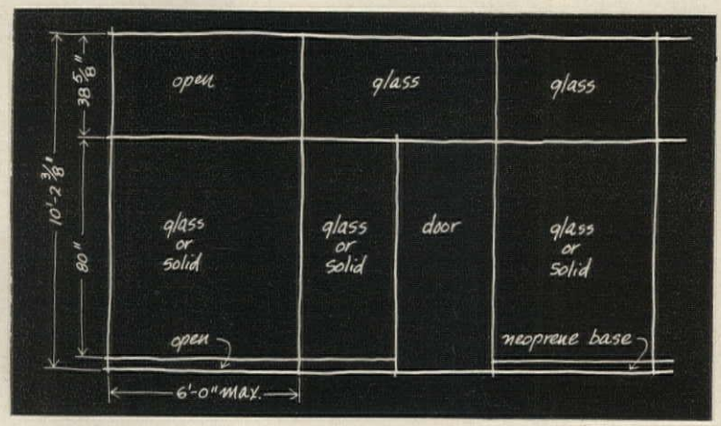
ARCHITECTURAL PORCELAIN

# Architectural partitions, acoustical shell concrete, flush diffusers—a review of new developments






IRA GRAYBOFF




**THIN MOVABLE WALLS**
**tastefully divide building space**

Without assuming the solid look of plaster or the succulence of a prime slice of veneer, Hauserman's *SOM Partitions* reach a simple elegance alien to the self-consciousness of most prefab interior walls. The honest appearance of these aluminum-framed plastic-faced panels as dividers of space—nothing more—came as no accident. Architects Skidmore, Owings & Merrill could find no existing partitions consistent with their formula for articulating what is structure and what is screen. They say standard systems try to look like bearing walls and have too many parts to be really flexible, and therefore they decided to design an inside wall package themselves. When the program and mechanics of the system were worked out completely enough for a dry run (in the Connecticut General mock-up building—AF, Oct. '55) a manufacturer stepped in. Metal partition mastercrafter E. F. Hauserman was intrigued by the challenge of a completely new kind of partition, and the contract for two lineal miles of partitioning lifted the project out of the custom job class into mass production. Details were volleyed back and forth between Hauserman engineers and the SOM design and production staff until all the little bugs—light leaks, adjustments to ceiling and floor variations, tolerance in spacing—were squashed. The wall assembly in-

*continued on p. 164*

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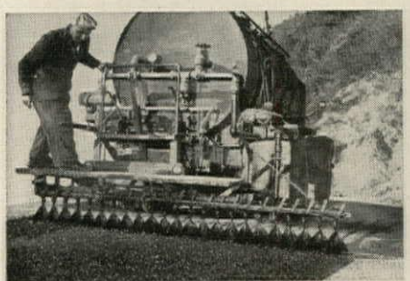
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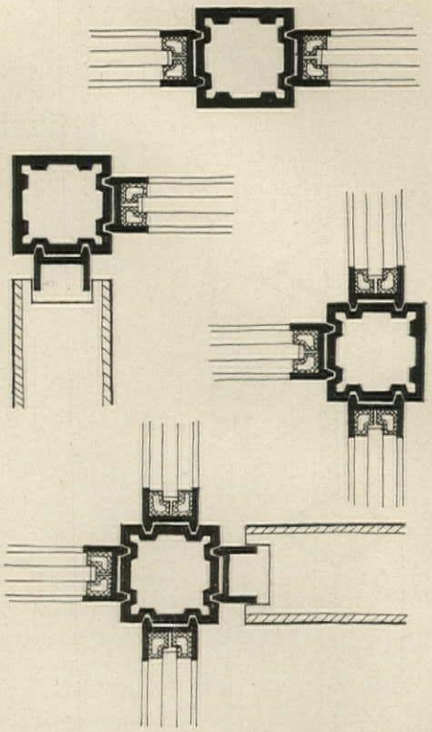
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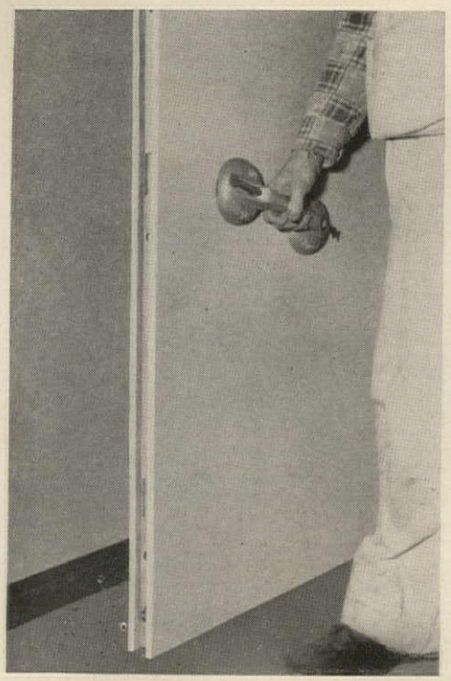
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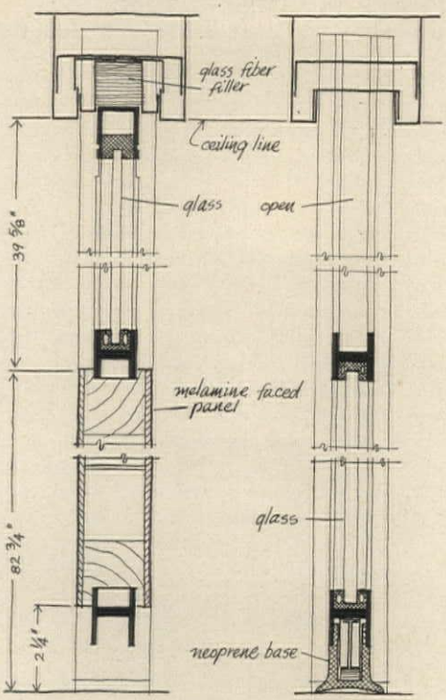
City & State.....



volves only eight basic components: the 2″ square post of 6063-T5 aluminum (grooved only on the sides that receive panels), a black anodized *H* channel which slips into grooves on all four sides of the panels; extruded keys that lift the bottom *H* track off the floor, spring clips which hold the panels taut between the posts, the door-high 2″-thick sandwich panels of melamine facing over a 2″ x 2″ wood grid core; premounted panels of unpolished plate glass floating in neoprene cushions. Top lights and transoms of clear glass and an extruded neoprene baseboard are optional. They are used as fillers for executive offices requiring occasional





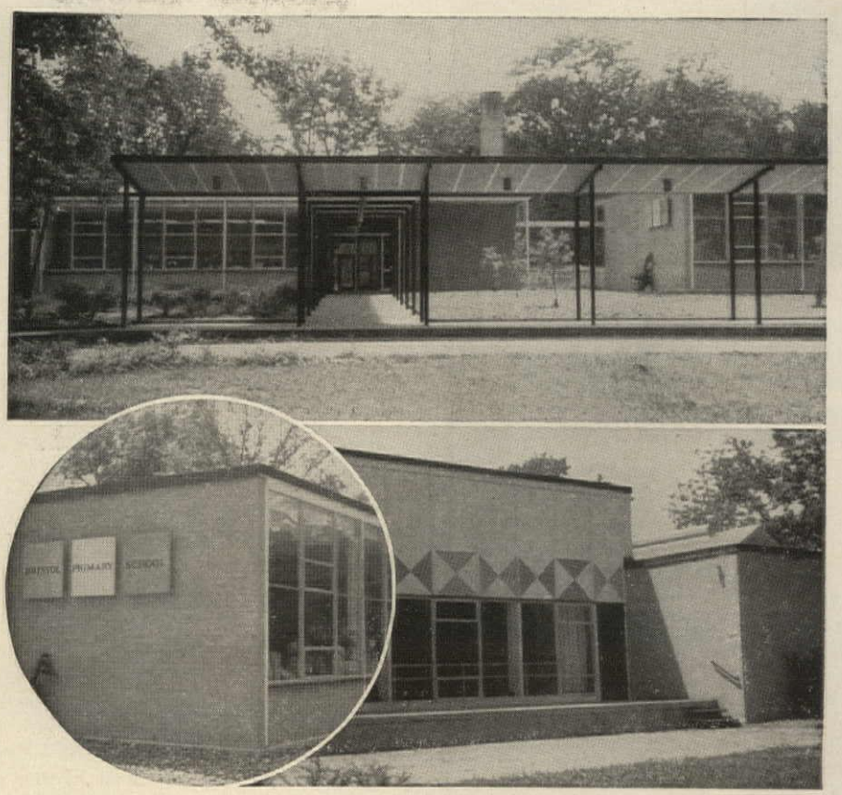



closed-door privacy. In most office areas the baseboards and tops are left open. One of the system's features that suit it to wide open bay space is its kingly 6′ module. The partitions can also be obtained in 3′ to 5′ spacing with a variety of metal and fabric faces and core materials.

The designer's reward: the satisfaction of working out a partition system which complements the exterior curtain wall construction. The manufacturer's dessert: after completing the two-mile stretch for Connecticut General, Hauserman is free to produce the *SOM Partitions* for other contracts. Prices will probably run $45 to $65 a lin. ft. depending on panel materials and spacing.

*Manufacturer:* E. F. Hauserman & Co. Cleveland, Ohio.

*continued on p. 166*

## *Ramset*® *speeds construction on prize-winning school*

Walls went up faster, attachments were made quicker and easier with RAMSET FASTENING SYSTEM, as modern as the latest construction methods known!

"RAMSET was used for securing all door jambs, window lintels and furring strips," according to general contractor Clem Albers of Albers Construction Company in St. Louis.

Bristol School in Webster Groves, Missouri, was winner in the 5th annual Competition for Better School Design . . . one of 5 top winners out of 147 entries. Hellmuth, Obata and Kassabaum, Inc. were the architects.

RAMSET is used extensively in curtain wall construction, last word in tall-building techniques. Strong, lightweight and completely mobile, RAMSET anchors to steel and concrete without pre-setting, drilling or plugging. Just pull the trigger and the fastener is set! No wires or hose to interfere.

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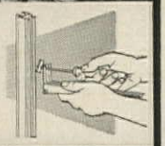
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### SHELL CONCRETE CEILING
**perforated to dampen din of ballroom**

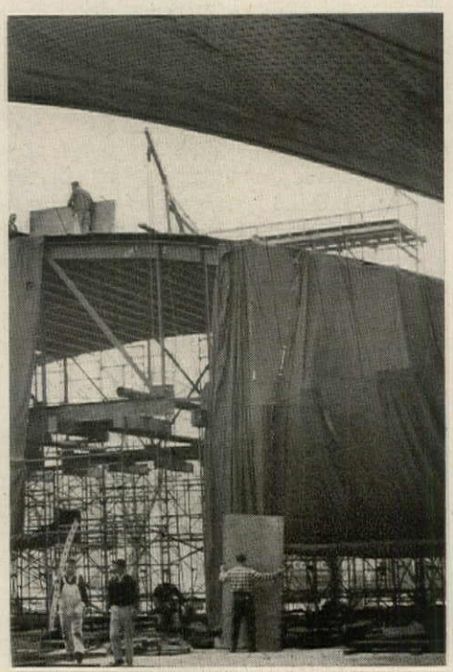
Toy balls and tin cans play a vital part in the ceiling construction for the Chase Hotel ballroom in St. Louis. Wanting effective sound control built into the 3″ concrete arch, hotel president (and graduate architect) Harold Koplar worked out this novel concrete punchboard with Denver Engineers Ketchum and Konkel. Sponge rubber balls, halved by the hotel butchers, are nailed to the formwork for the 112′ x 156′ ceiling. Empty cans (30,000 in toto) are squeezed down over each 2″-wide ball half. The cans stay vertical as the concrete is poured around them and, when the concrete sets, the forms are removed and the tops of the cans are cut out. A glass fiber blanket laid between the concrete and roof topping for thermal insulation also absorbs noises channeled to it through the holes. Post-tensioning cable laid across the arch at 30′ intervals create prestressed invisible ribs to bolster the 3″ shell. Estimated cost is about $2.90 a sq. ft. Preliminary tests of the ceiling's acoustical properties showed that it should be especially good in combatting noise in the low decibel range.

*Information:* Harold Koplar, Chase Hotel, St. Louis 8, Mo.

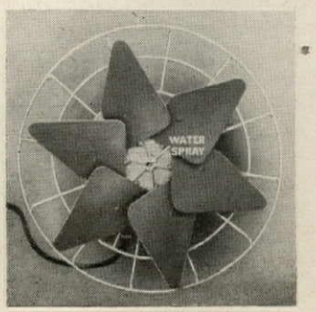
### POWER PLASTERING TOOL
**trowels putty coat dense and smooth**

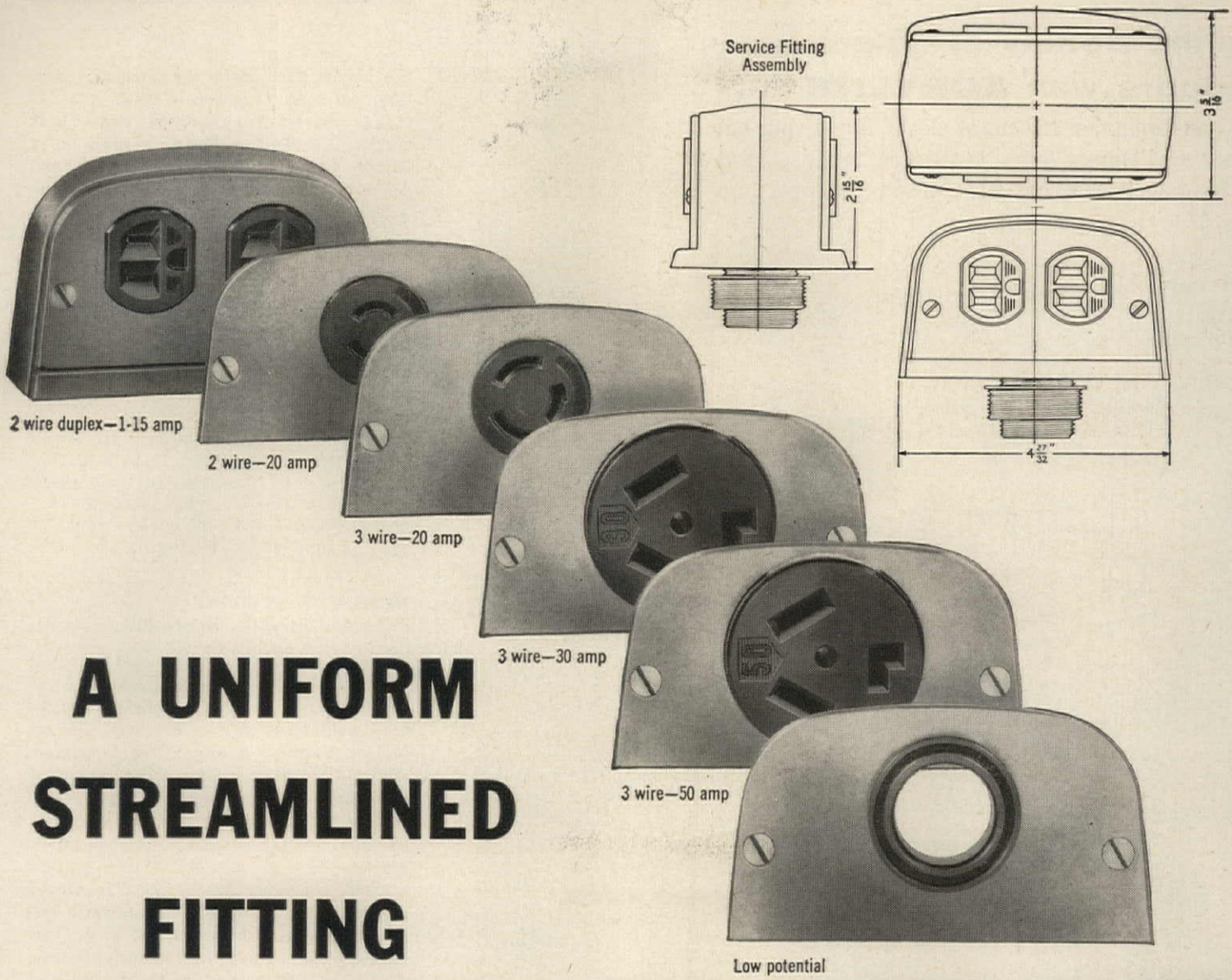
One device that helped plasterers regain competitive grace in the building battle of wets vs. drys is the *E-Z On* automatic sprayer. Since the plaster gun was clasped to the union's bosom seven years ago, the machine also has displayed a talent for handling acoustical and fireproofing coatings. Continuing its mechanization of the journeyman, E-Z On Corp. now is introducing an ingenious power trowel. Looking like a fan with squirt attachment, the six-bladed tool can be used to speed up the finishing of putty coat, Keene's cement and gypsum plaster. Flexible and rigid blade sets come with the trowel and screw on and off easily. For water troweling, the stiff blades are used when the putty coat is almost set. The action of

*continued on p. 168*









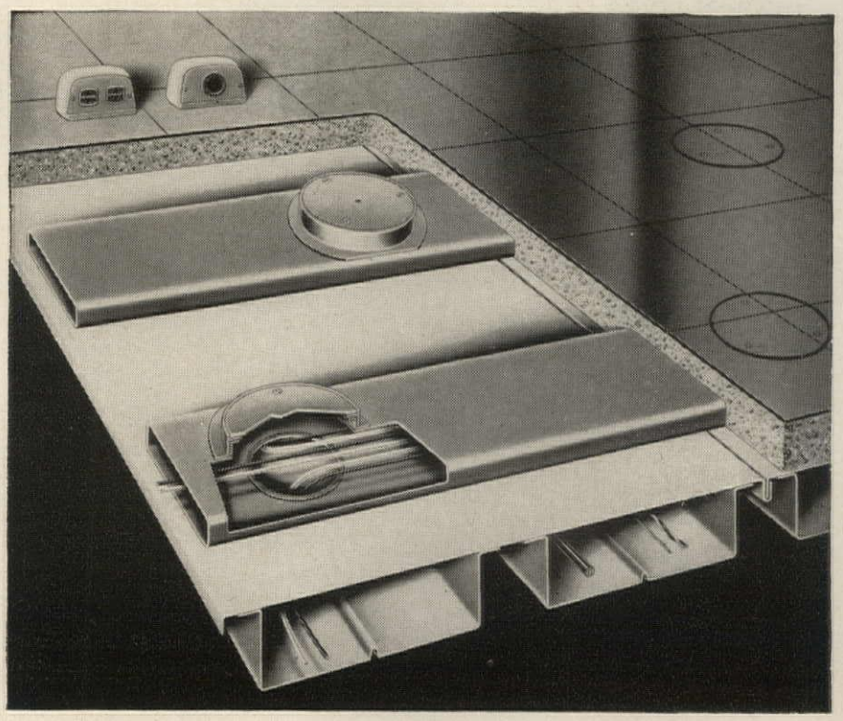

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When your building's plan calls for cellular steel floors, make sure you include a specification for NE Service Fittings and a National Electric Header Duct System.



Used with cellular steel floor construction, National Electric Header Duct makes it possible to energize selected floor panels to accommodate any requirement for power, light, telephone, or communication.

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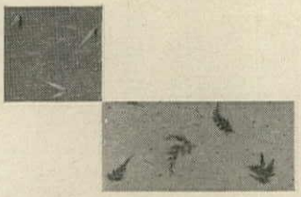
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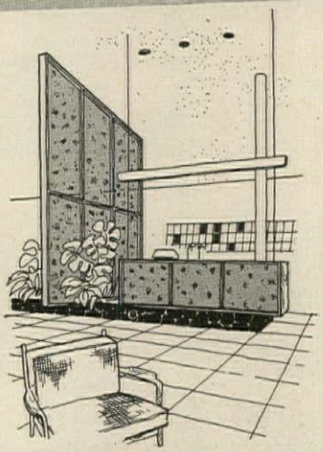
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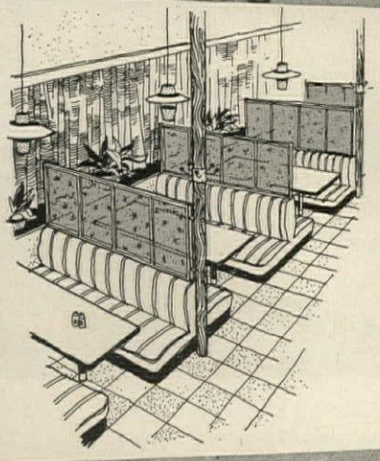


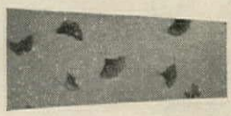
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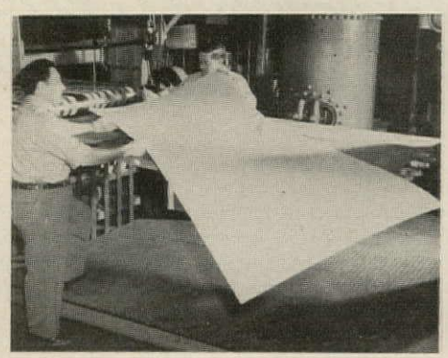
Bay State Road, Cambridge 38, Mass.
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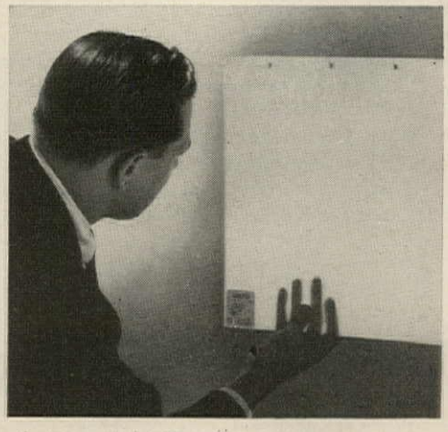


the blades accelerates the hardening and compresses the surface so that it withstands blisters, shrinkage and check cracks. (Instead of being dipped in a bucket as a hand tool, the *E-Z* trowel delivers its own tiny water spray on the wall or ceiling through an orifice in the center of the blades. The power tool can handle Keene's cement several hours old if it has not dried too thoroughly. For use on gypsum plaster (which is more shrink-resistant than a lime finish but less spreadable) the manufacturer suggests laying down the gypsum with hawk and trowel and then finishing off the surface with the *E-Z* trowel. Its price, including extension cord, both sets of blades and water pressure tank, is $174.50. The cost is said to be amortized by a three-man crew working one five-day week.
*Manufacturer:* E-Z ON Corp., 1725 W. Pershing Rd., Chicago 9, Ill.

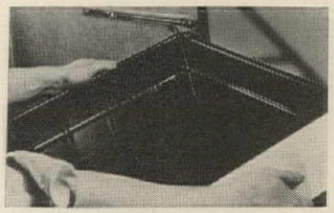
**RESILIENT STYRENE**
**extruded in wide, matte-finish sheets**

Styrene has come pretty far from its early, and still extensive, emulation of ceramic wall tile. Breaking away from the 4¼" x 4¼" square in a big way, Chicago Molded Products Campco Div. is extruding 4'-10" wide sheets of an improved copolymer *S-540*. A blend of styrene and rubber, the sheeting has high impact, tensile and flexural stengths. It can be rolled out as thick as ¼" or as thin as .010 without showing strain marks. Heavy sheets can be readily vacuum formed, and fabricators use them for molding large complex shapes such as equipment housings, racks and trays. The thinner gauges,





more directly useful architecturally as durable surfacing, can be cemented over walls and partition cores. The sheet can be embossed with a satin finish during the extrusion process. Less expensive than gloss sheet, the matte material is also more scratch resistant. *S-540* is integrally pigmented in several good stock colors. It needs no painting. An occasional washing keeps it fresh, and bad spots or scars come off with a rub of fine steel wool. Decorative patterns and textures can be printed into the translucent and opaque sheet. For freestanding screens, the ⅛" sheet could be mounted without backup board on 3' spans, 3/16" on 4' and ¼" on 4'-10" spacing. Framing should allow the rubber-plastic some play—its expansion characteristics are about the same as acrylic. Approximate prices run from 17¢ a sq. ft. for the matte white 3/64" up to about $1.20 for the ¼". On orders of 10,000 sq. ft. costs are about 20% less. *Manufacturer:* Campco Div., Chicago Molded Products Corp., Chicago, Ill.

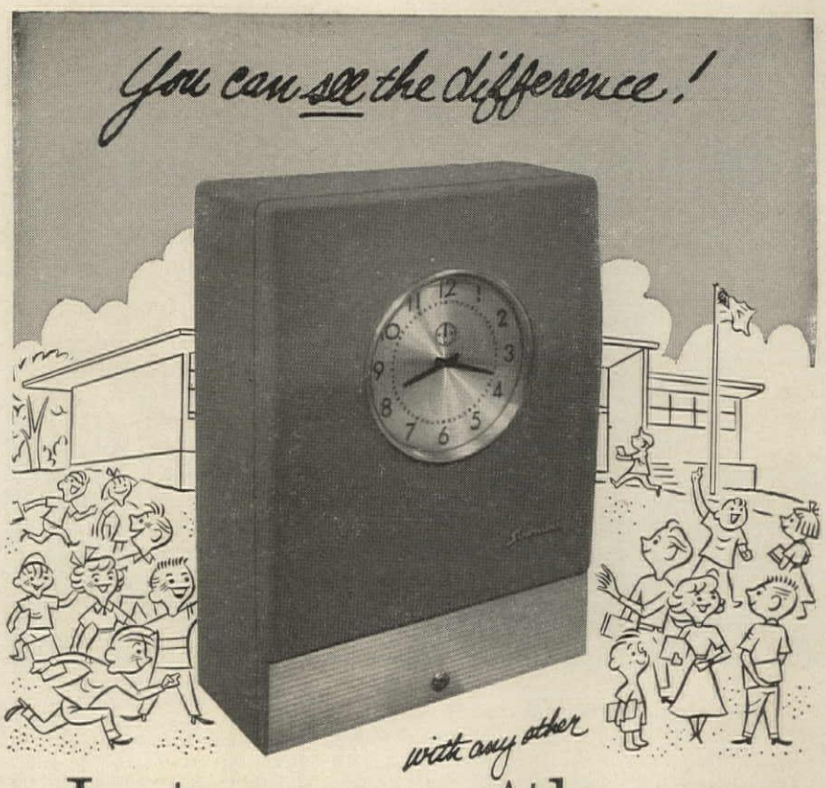




**MOLDED PLASTIC DRAWERS**
**get new shapes and distribution**

Bakelite's marvelous drawers of molded black phenolic have been hovering around the marketplace for some time, frustrating designers who wanted to get their hands on them. Now contractors and architects who want to use these sensible, nonwarping components for custom furniture and built-in storage can buy them as easily as 2 x 4's. Knoll-Drake not only has given the drawers some svelte shapes and useful sizes but also is distributing them nationally through building supply and lumber dealers. Finally the handy drawers take their place on the construction materials shelf. Retailing at $5.95 to $13.50 apiece, the *K-D* units come in three sizes: 34⅜" wide x 7 3/16" high; 34⅜" x 3 9/16" and 17⅛" x 4 5/16". All

*continued on p. 170*


Just compare the new Stromberg Electronic Time System . . .

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**Abolite uplight mercury units for economical high bay lighting**

Plans for this new plant called for high bay illumination without objectionable shadows between lamps and ceiling. That's why Abolite aluminum uplight mercury units were specified. The unique open-top design of this reflector provides 18% uplight, washes out ceiling contrasts, gives excellent overall illumination. Cleaner, cooler lighting, longer lamp life, less maintenance also result from the open-top feature.

You can make important savings with these new Abolite uplight mercury units. Compare their performance and cost with other type fixtures. For full details write *Abolite Lighting Division, The Jones Metal Products Co., West Lafayette, Ohio.*

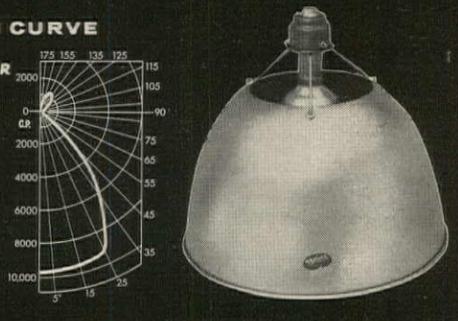
**ABOLITE** LIGHTING

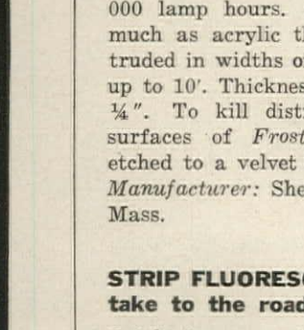
**LIGHT DISTRIBUTION CURVE**

**24" DIA. ALUMINUM REFLECTOR**

**LAMP H 400-RC1**

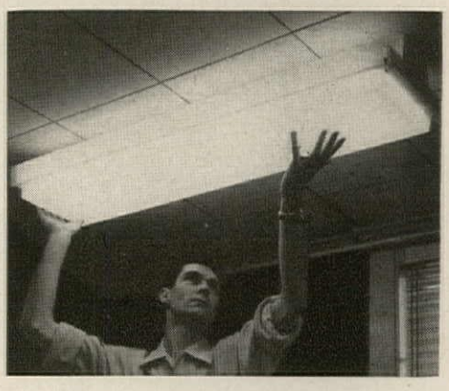
Installation data: 69 units, using General Electric H 400-RC1 color-improved mercury lamps. 35' ceiling, 28' mounting height, spaced on 20' centers. 35-foot-candles average initially.



are 18 3/16" deep and are supplied with spray coat fronts of white or gray epoxy resin as well as in the natural licorice luster of the phenolic. (The nearest telephone attests to phenolic's wear resistance.) Bent tubular pulls designed for the drawers in spun chrome and polished brass retail at 95¢ each for the 5" and 75¢ for 2½". Steel tracks at $1 a pair and divider strips for the wide drawers are also part of this very nice package.
*Manufacturer:* Knoll-Drake, 120 E. 56th St., New York, N. Y.





### STYRENE DIFFUSER
**holds whiteness under ultraviolet**

All the old objections to polystyrene diffusers—brittleness, yellowing and shine—seem to be vanquished in Sheffield's process for making *Frost White*. The translucent flexible material is extruded with a transparent coat of an ultraviolet absorbing chemical on one face. This treated side is placed toward the fluorescents to prevent yellowing from ultraviolet emissions. In accelerated aging tests the diffusers held their whiteness for the equivalent of 20,000 lamp hours. Costing about half as much as acrylic the white plastic is extruded in widths of 2" to 30" and lengths up to 10'. Thickness ranges from .025" to ¼". To kill distracting reflections, the surfaces of *Frost White* diffusers are etched to a velvet finish.
*Manufacturer:* Sheffield Plastics, Sheffield, Mass.

### STRIP FLUORESCENTS
**take to the road for tryout showing**

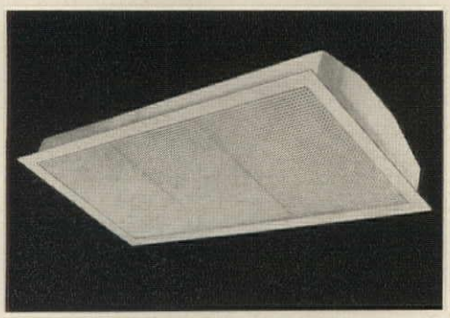
Bright hot spots that flash and zoom past night motorists are eliminated in General Electric's experimental road lighting sys-



tem. Certain to get attention in the nation's tremendous highway construction program, the new outdoor fluorescents bathe the road with uniform comfortable light. The 8′ tubes are coupled parallel to the curb line in continuous rows 25′ above the pavement. The reactions of highway planners who have seen the glareless luminaire system may hurry it out of G-E's back yard onto the street.
*Developer:* General Electric Co., 300 S. Stratford Rd., Winston-Salem, N. C.

### PLASTIC GRATE TROFFERS
**fit into 83 hung ceiling systems**

In deference to the popularity of its tiny cell louver light fixture and to the trend toward integrated ceilings, Guth is producing *Gratelite* in eight recessed troffers that can be installed in almost every manufactured suspension system. The new models are 2′ wide and come in 2′ and 4′ lengths, in 2, 3 and 4 lamp units. Each features a molded translucent grid of ⅜″ squares. Having a 45° cutoff, the plastic shield provides high illumination level with low surface brightness. Prices



range from $90 to $115. All visible metal parts have a baked white finish.
*Manufacturer:* Edwin F. Guth Co., 2615 Washington Blvd., St. Louis 3, Mo.

### FRAMELESS DIFFUSER
**rests on its haunches in ceiling grid**

White vinyl diffusers on *Strialux* recessed fluorescent fixtures are designed for easy, inobtrusive mounting in a suspended ceiling system. Rigidized by boxy corrugations, the lightweight 2′ x 4′ molded pans need no metal frames or bulky hanging devices. Used as individual fixtures, in series or as an over-all luminous area,

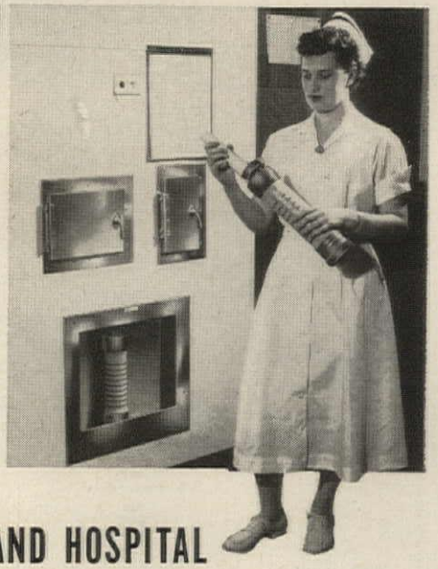
*continued on p. 172*


# LAMSON



*vertical conveyors and airtube systems*





*cut costs, improve service*

## AT RHODE ISLAND HOSPITAL

Working together as a team, Lamson's Selective Vertical Conveyor and Automatic Airtube® System speed communication of requisitions and other paperwork, central supply room items, laundry packs, drugs, lab. specimens and medical records through the Rhode Island Hospital.

Urgently needed drugs, supplies, linens, etc., are requisitioned 'round the clock without having nurses leave their stations, by means of a 29-station Airtube System. 28 more stations have been provided for to service future additions and remodeled buildings of the hospital.

To assure speedy delivery of these items through 11 floors of the new main building, the Selective Vertical System carries them automatically from central supply areas to the nurses' stations.

Integration of these Lamson systems has allowed Rhode Island Hospital to combat the increased costs of operation without lowering its rigid standards. First of all, the systems allow nurses and their aides to devote their full time and energies to the care of their patients by saving them literally thousands of steps a day. Second, they provide faster service at lower cost than can be performed manually. Third, they establish a "level workload"—a steady and uniform amount of work throughout the day, eliminating peaks and valleys.

Why not talk over your transfer-of-materials-problems with a Lamson engineer? He'll show you ways to cut costs and improve service.

LAMSON

**Valuable Information! Clip to Your Letterhead**

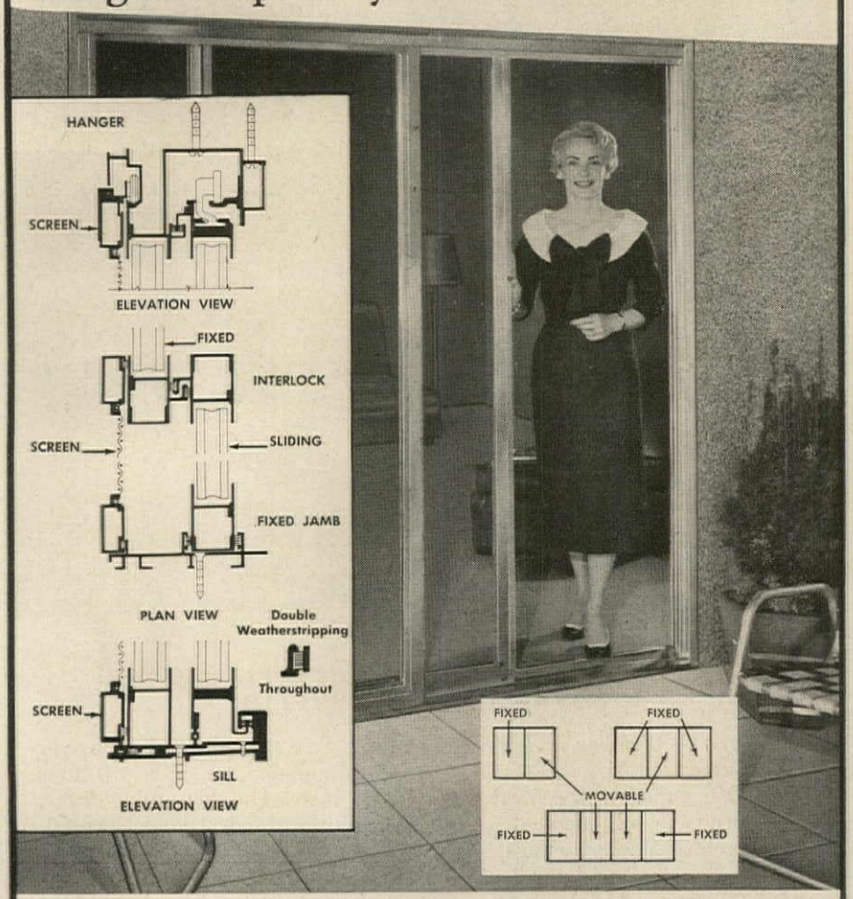
**LAMSON CORPORATION**
**92 Lamson St., Syracuse 1, N. Y.**
Plants in Syracuse and San Francisco
Offices in Principal Cities

☐ Have an engineer call me for an appointment
Send me these bulletins:
☐ "Lamson Selective Vertical Conveyors"
☐ "Airtube on Target"
☐ "Automatic Airtubes System"
☐ Hospital Case Histories
92

*New Fleetlite*

# Sliding Glass Door

Designed Especially for Northern Weather




Now you can specify Fleetlite Sliding Glass Doors or attractive Picture Walls that block winter winds and western dust storms yet bring outdoor beauty into any room. Your clients will appreciate the extra benefits of this quality engineered trouble-free construction.

Doors slide silently and easily on overhead ball bearings. Screens glide on nylon rollers. Doors interlock with double mohair weather stripping on all four sides. Specially designed aluminum extrusions provide rigidity and maintain alignment. You can specify plate glass or insulating glass up to one inch thick.

Double Horizontal Sliding Windows lift out for easy cleaning. Mohair weather-stripped.

Picture window combination with double, double - hung flanking windows.

Jalousie Windows and Doors protect in any climate. Inside screens replaceable with storm sash.

Achieve design harmony with matching Fleetlite double hung and sliding windows.

Please send literature on:

- ☐ Sliding Glass Doors
- ☐ Horizontal Sliding Windows
- ☐ Double - Hung Windows
- ☐ Jalousie Windows and Doors

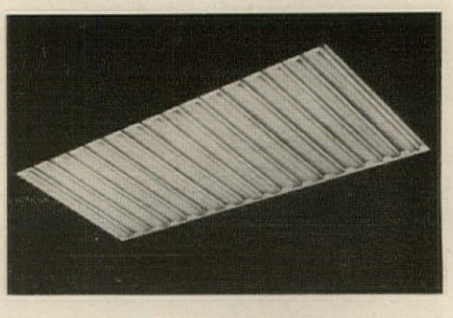
Name.....

Address.....

City.....State.....

Fleetlite
AMERICA'S Finest WINDOW ®

FLEET OF AMERICA, INC., 2027 Walden Avenue, Buffalo 25, N. Y.



*Strialux's* simple rectilinear pattern also adds interest to the ceiling surface without interfering with the light distribution. The plastic diffusers are installed by squeezing the sides and slipping them up into the grid opening to rest on the suspension members. Flanged models are also available for plaster ceilings. Prices range from $40 to $62 a fixture, depending on the type and number of lamps.
*Manufacturer:* Lightolier, Inc., 11 E. 36th St., New York, N. Y.

### SHIFTLESS TRUCK
**hauls 35 tons over bad grades**

Traipsing over rocky embankments, soft sand and gumbo with the unconcern of a tank, Le Tourneau's 35-ton transporter is well suited for construction duty in rough roadless terrain. The 38'-long machine has a 335 hp diesel engine which drives two generators that provide the power for speed and braking through a single lever control. The agile carrier has no gears to shift and is steered by a simple finger switch. A flexible suspension system and low-pressure tubeless tires 6' high and 2'-6" fat absorb road shocks and give



good contact. Each tire puts more than 4 sq. ft. of tread on the ground, and each wheel has its own DC motor that feeds power in proportion to traction; if one or more of the wheels lose their grip, the power is distributed automatically among the others. The off-road transporter can be supplied with platforms of different lengths and mountings for machinery.

Another Le Tourneau materials handler, this one with roots for plant installations, is a power-rotated jib crane. Taking up just a few sq. ft. of the plant floor or yard, the 17'-high self-supporting crane revolves its 25' boom in a full circle to

serve 1,936 sq. ft. Designed for smooth, precise handling of heavy castings, crates and equipment, the crane is made in capacities ranging from 6 to 15 tons. (Other models with longer booms and lighter capacity—3 and 4 ton—cover up to 3,848 sq. ft. from a single pivot point.) In many locations, the pillar- or base-mounted jib can do the work of a lumbering overhead crane. Basic 6-ton crane with 29" diameter column lists at $2,575, not



installed. Power rotation for revolving the boom at ½ rpm costs $1,385 and a trolley hoist is $1,930.
*Manufacturer:* R. G. LeTourneau, 2399 S. MacArthur, Longview, Tex.

**FOILED SHEATHING**
**is bulkless reflective insulator**

Three-ply fiberboard is faced with aluminum skins to make *Dennyfoil* ⅛"-thin reflective insulation. Nailed to framing so that a ¾" air space is left on each side, the inexpensive material is said to equal the thermal value of bulky batts. *Dennyfoil* is bonded with waterproof adhesive and the joints are made moisture resistant with a paraffin base material. The laminate comes in 4' lengths in widths from 2' to 3'. Cost per square foot runs from 5½ to 6½¢, depending on quantity purchased. The aluminum skins are treated to allow vapor to pass through without detracting from its 95% reflectivity, making *Dennyfoil* a breather board rather than a vapor barrier.
*Manufacturer:* Denny Paper & Board Co., 2028 Washington Ave., Philadelphia 46, Penn.







**As ceiling heights go down Ultra-Lux goes up**

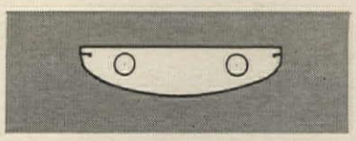
The trend to lower ceiling heights in schools and office buildings calls for a new shallow lighting fixture. Low ceilings rule out conventional pendant mounted fixtures. Shallow ceiling construction does not permit recessed fixtures.

Surface-mounted Ultra-Lux, with its shallow profile, provides an attractive and efficient answer . . . gives a recessed appearance at surface-mounted cost. Its gently curved shield of polystyrene seems to recede into the ceiling.

With its translucent polystyrene shield, Ultra-Lux provides efficient light transmission and uniform distribution. Uniform surface brightness is well within acceptable limits for glare-free comfort.

Light in weight, light in appearance, sturdily built, and easy to install, Ultra-Lux fixtures may be installed in single units or joined in continuous runs. Concealed hinges simplify cleaning and relamping.

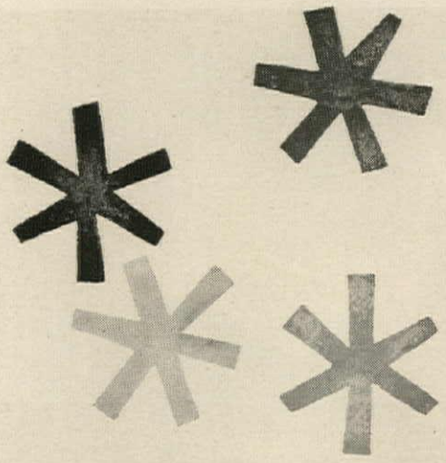
Recessed Appearance
Surface-Mounted Cost



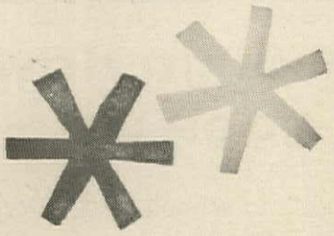
GARCY Ultra-Lux Total Depth 3¼"

GARCY
Preferred for Performance
COMPLETE COMMERCIAL LIGHTING

Garden City Plating and Mfg. Co.
1736 N. Ashland Ave. • Chicago 22, Illinois
In Canada: Garcy of Canada, Ltd., 1244 Dufferin Street, Toronto 4



# Which is the best way to air condition a building?

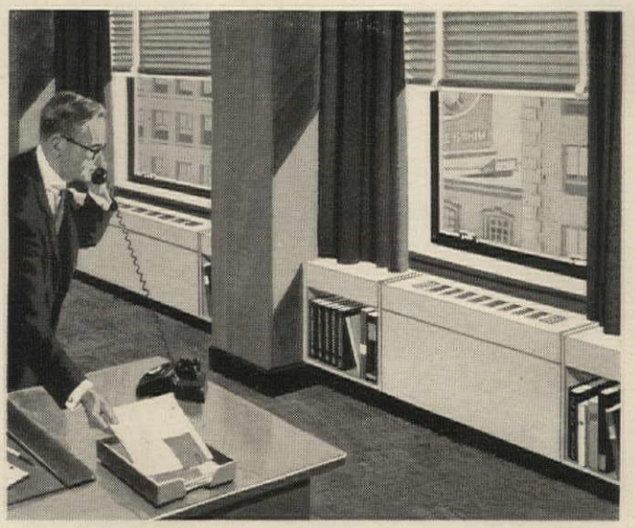


That depends on the building. Its size, age and shape are important. Its construction details, such as windows, walls and columns, affect the location of individual units. Carrier has all the answers—here's the newest! Modular Weathermaster* units. Based on the "building block" principle, they adapt to windows and wall construction in both new and old buildings, provide individual climate control in each room. Only Carrier makes Modular units like these to fit any building problem. Here are six of many combinations—note how flexible they are. For complete information, call your nearest Carrier office.

Or write Carrier Corporation, Syracuse, New York.

Carrier

*Reg. U.S. Pat. Off.



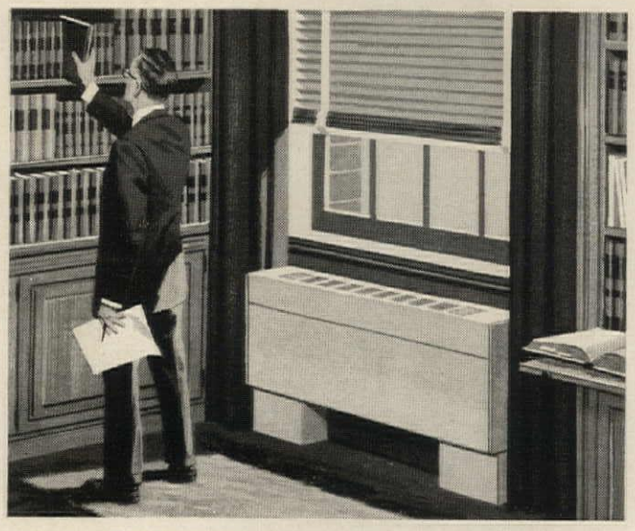
**For column-to-column treatment,** trim wall-hung units with standard prefabricated enclosures, accessories and shelving are "tailored" to fit building modules.



**For a clean, continuous appearance,** two well-proportioned Weathermaster base units separated by a filler piece look good, make future partitioning easy.



**For pleasing corner assemblies,** a wall-hung Modular Weathermaster unit with prefabricated cabinet and run-out enclosure is both attractive and economical.



**For floor-fed services,** a pedestal arrangement attractively conceals air and water risers. This method of distribution eliminates the need for furred-in risers.



**For harmony with custom interiors,** a decorative furred-in arrangement with base unit, inlet panel and discharge grille matches any interior treatment.



**For modern, all-glass buildings,** a "foot-high" column-to-column arrangement is extremely flexible and blends well with modern architecture and furnishings.

# *A bright room means better work!*





## For office or school, choose the colorful chair...Samsonite

Research shows that cheery surroundings boost morale and efficiency. That's why office managers of key American companies, and principals of leading schools, choose Samsonite all-steel folding chairs. They've found that while drab surroundings tend to produce inferior work, colorful Samsonite chairs lift spirits high and increase efficiency. Whether you use them in meeting room, school room, or private office, you'll find that Samsonite offers the best folding chairs ever devised. They're not only *the smartest*—with 10 beautiful decorator colors, they're the *most durable*. Check these quality features for yourself:

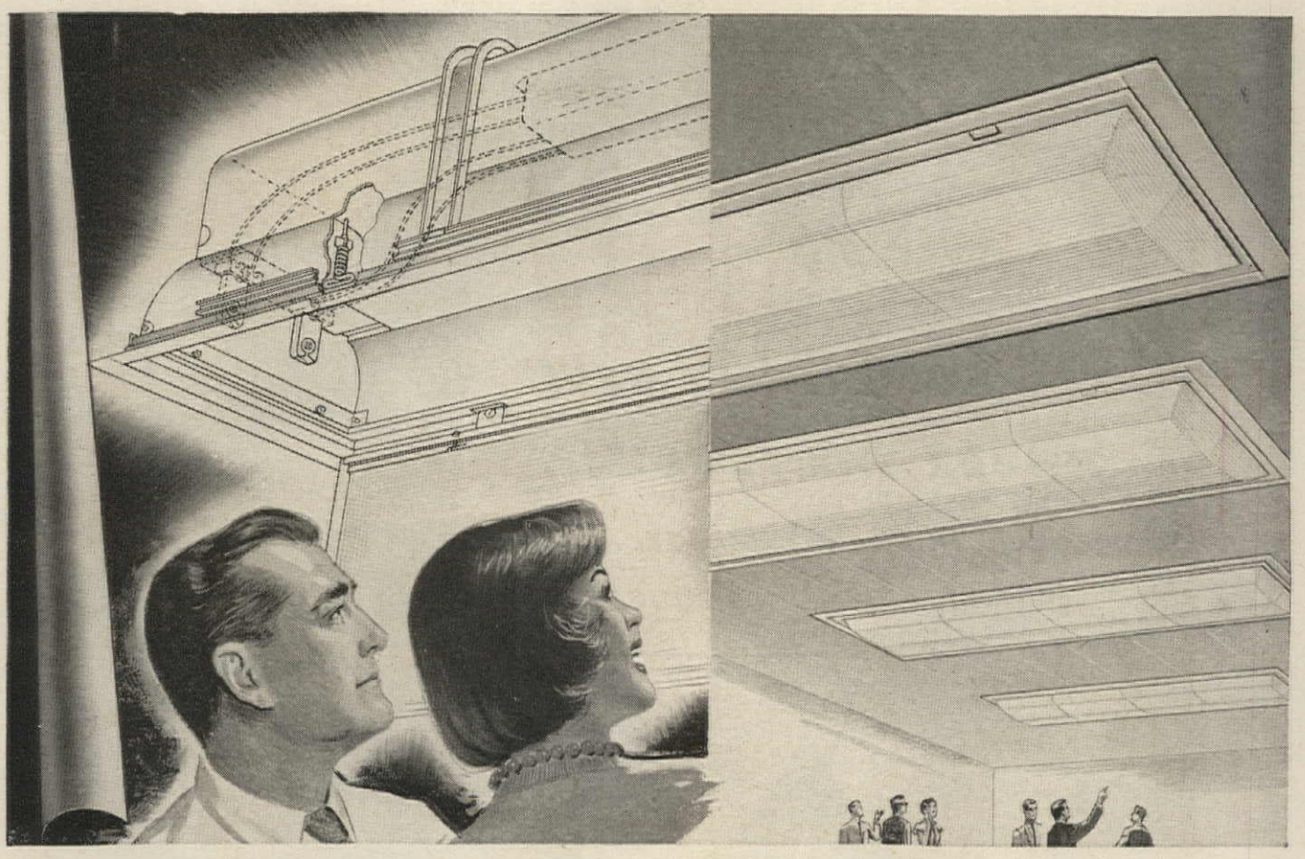
- Safety-guard seat hinges
- Replaceable rubber feet
- Chip-resistant baked enamel finish
- Will not tip, tilt or wobble
- Comfort-curved back and seat design
- Reinforcing steel cross braces on chair legs
- Bonderized to resist rust
- Easy, compact folding
- Electrically welded tubular-steel construction

Write us about Samsonite all-steel folding chairs today!

## SAMSONITE FOLDING CHAIRS IN 10 DECORATOR COLORS

Shwayder Bros., Inc., Institutional Seating Division, Dept. **AF-3** Detroit 29, Mich. Also makers of famous Samsonite Luggage, Classroom Furniture and Card Tables and Chairs for the home. Merchandise available in Canada from Samsonite of Canada Ltd. Queens Highway, East, Stratford, Ontario

***Visit the Samsonite Booths #A35 and A37 at the National Catholic Convention, April 23-26!***

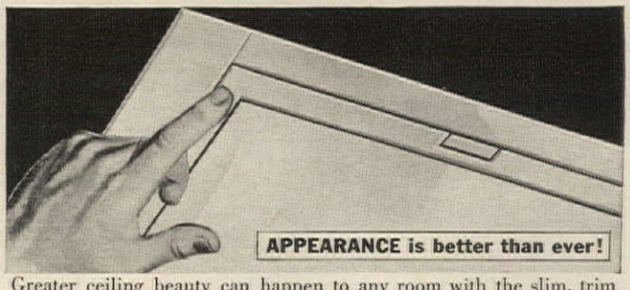


# Look what happens when you specify BENJAMIN Troffer Lighting

**Things really start to happen** when you specify money-saving, new Benjamin Troffers. Lighting maintenance expense is cut. Low-ceilinged rooms get a new improved light treatment. Annoying glare is banished. There's a brand new freedom of architectural expression and lighting layout. Shown here are a few of the advanced Benjamin features that help to make all this happen at the lowest possible cost per year. Investigate Benjamin Troffer Lighting for schools, stores, offices and factories . . . all things considered they're the Better Lighting Choice.

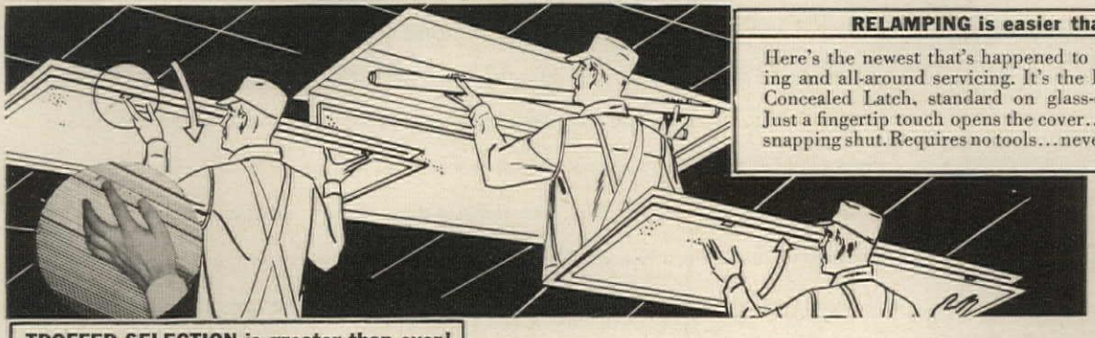
BENJAMIN ELECTRIC MFG. CO., DES PLAINES, ILLINOIS

Sold Exclusively Through Electrical Distributors.



**APPEARANCE is better than ever!**

Greater ceiling beauty can happen to any room with the slim, trim design of Benjamin Troffers. A seamless frame, which shows no visible marks where the cover is joined, and concealed latches and hinges, make possible smooth, uninterrupted lines.



**RELAMPING is easier than ever!**

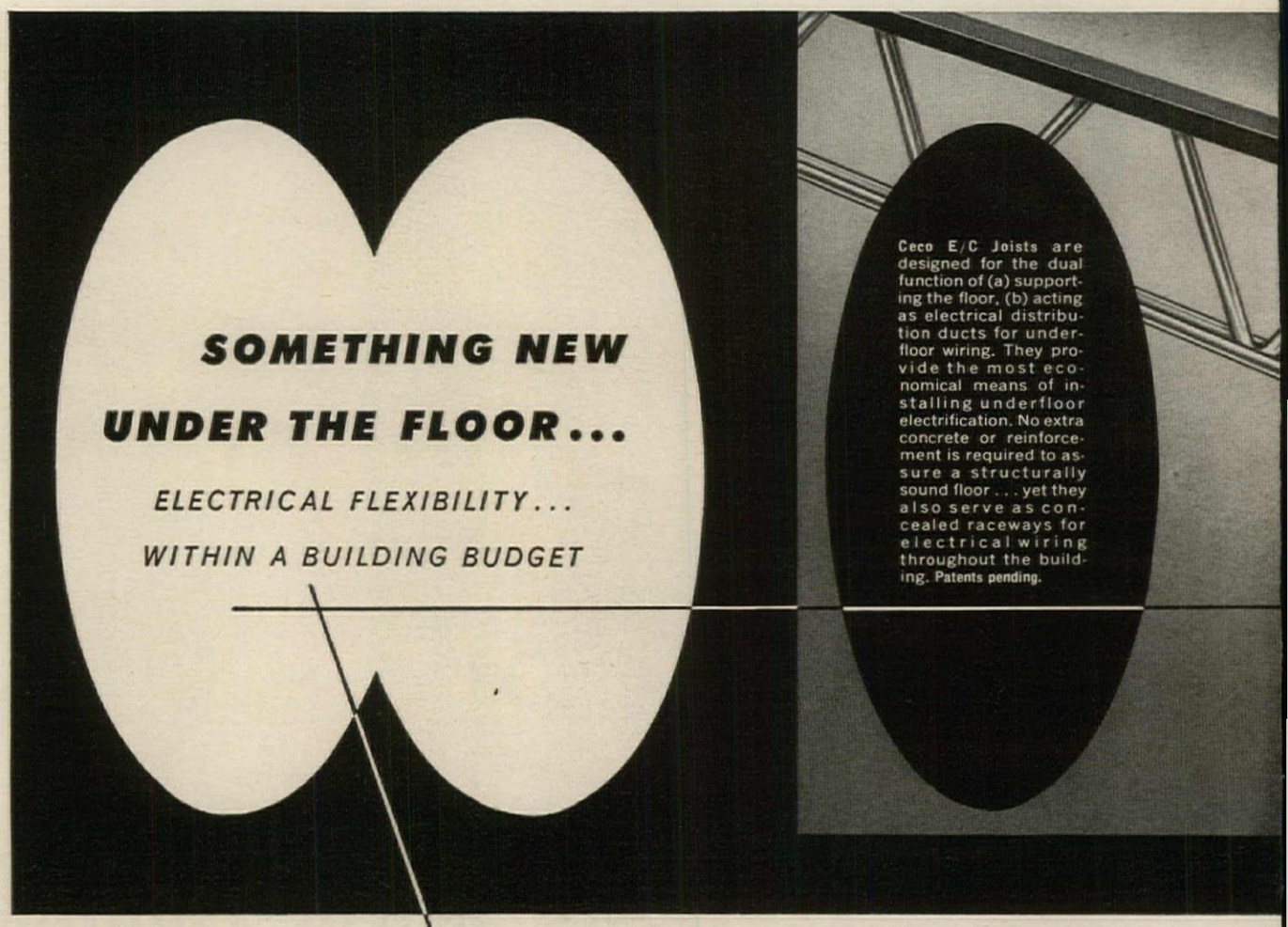
Here's the newest that's happened to speed up relamping and all-around servicing. It's the Benjamin DeLuxe Concealed Latch, standard on glass-enclosed troffers. Just a fingertip touch opens the cover...closes by simply snapping shut. Requires no tools...never needs servicing.

14078

**TROFFER SELECTION is greater than ever!**

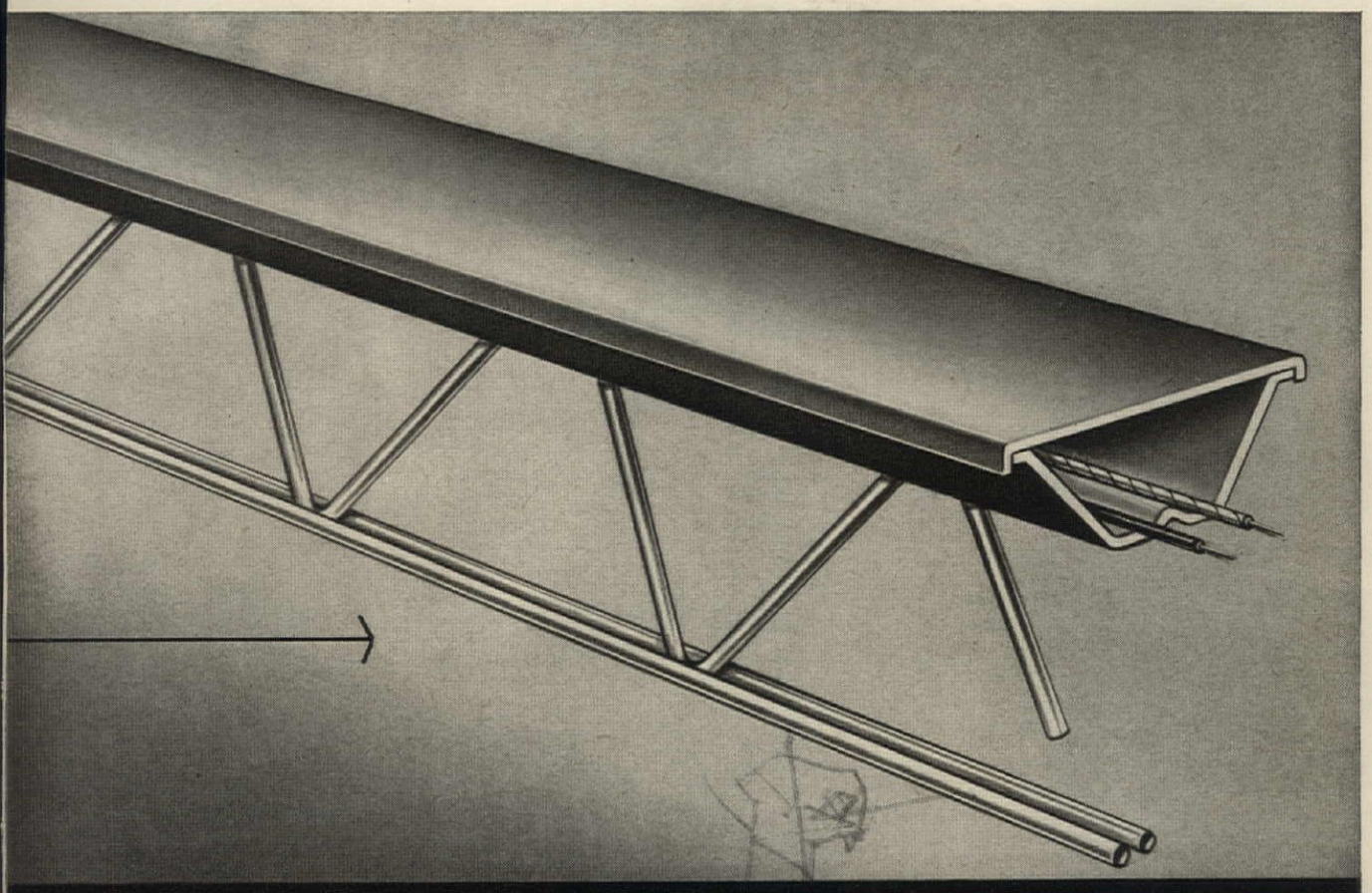
There's no need to compromise size, style or type of installation when you specify Benjamin Troffers! Any architectural effect you desire can be made to happen with this wide choice: 12″ and 24″ widths; 4′ and 8′ lengths; 2′ x 2′ for fill-ins; wide range of glass and plastic covers or louvers; six different mounting styles.

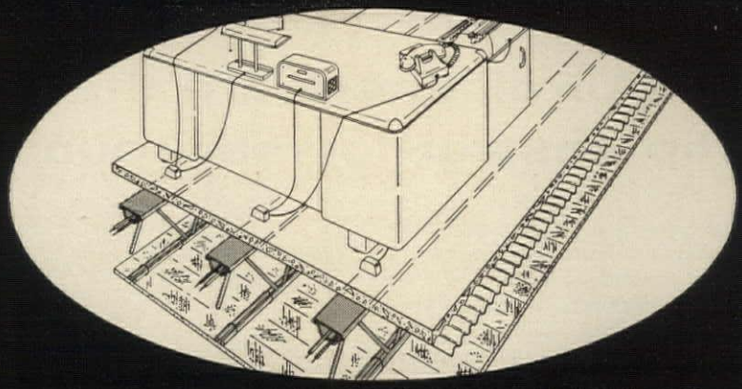
Certified Lighting for a Better America




**New exclusive CECO Electro-Channel Steel Joist Construction for Underfloor Electrical Systems Saves Time . . . Saves Weight . . . Costs Less, Too**

Building planners recognize the basic fact that in this "electrical age" buildings must be wired for the *future*. To provide only for today's requirements is not enough. Use of electrically-operated business machines and communication equipment is constantly increasing. But the question is: How to provide for future electrical flexibility at *lowest cost*? Ceco meets the issue with its new Electro-Channel Open Web Steel Joists. Now, for the first time, steel joist construction can provide an integral underfloor raceway system allowing complete electrical flexibility. These joists have the same structural properties as regular Ceco Shortspan Open-Web Steel Joists. But in the Electro-Channel Joists the conventional top chord is replaced by a specially shaped hollow section which serves both as the top chord of the joist and as an underfloor distribution duct for electrical circuits. For complete information on Ceco Electro-Channel Steel Joist Construction, consult your nearest Ceco office. *Approved by the Underwriters' Laboratories for use with electrical header ducts and accessories as manufactured by General Electric, National Electric Products Corporation and Walker Bros.*





Wiring can be brought up through the floor at any point along the joists.

CECO STEEL

"CREATIVE ENGINEERING" BY CECO—with a variety of building methods and products to meet any design problem. See CECO in the early planning stage for Steel or Concrete Joist Floor Systems—the most economical Underfloor Electrification—the widest line of Steel and Aluminum Windows and Curtainwalls. All will help you accomplish your design objectives. And CECO products and services assure quality construction on a tight budget.

**CECO STEEL PRODUCTS CORPORATION**

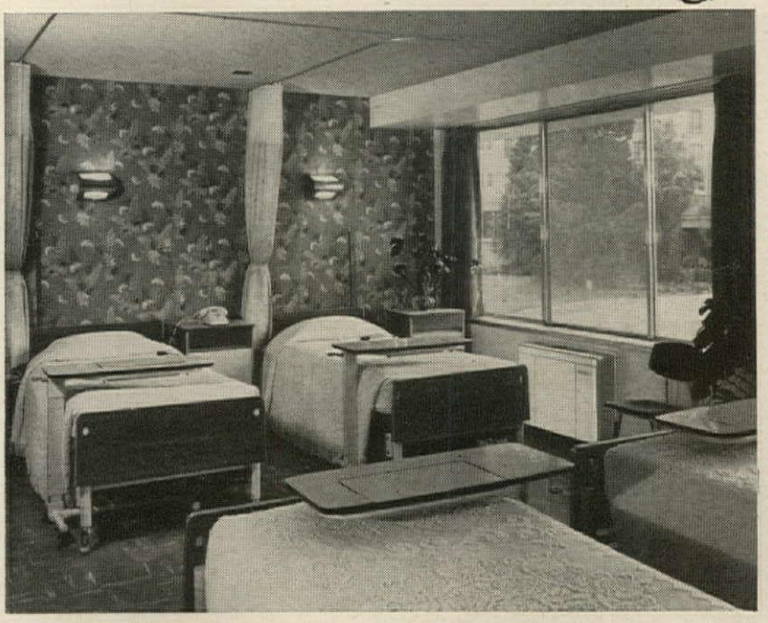
Offices, warehouses and fabricating plants in principal cities
General Offices: 5601 West 26th Street, Chicago 50, Illinois

In construction products Ceco Engineering makes the big difference
... Steel Joists / Metal Roof Deck / Ceco-Meyer Steelforms/Concrete Reinforcing/ Windows, Screens and Doors / Metal Lath

# New hospital



# or existing hotel...



**QUIET AIR CONDITIONING** is especially desirable in hospitals and rest homes. In addition, patients can choose their own degree of comfort.



**DETROIT STATLER HOTEL** recently installed its first group of AIRditioners.

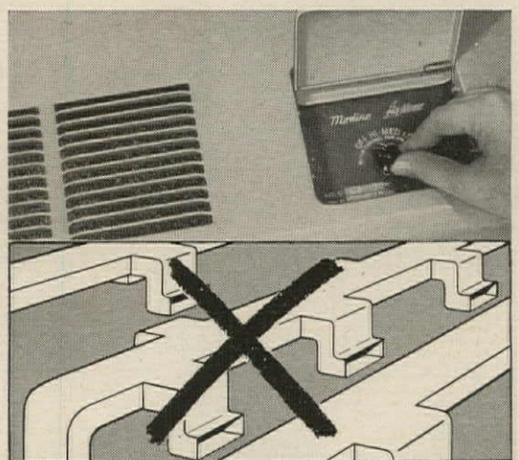
## Modine AIRditioners are the quiet, fingertip answer to year-round comfort

A TURN of the dial . . . and Modine AIRditioners deliver the desired air-conditioned comfort—quietly, instantly, smoothly. This fingertip control provides personalized air conditioning for hotels, office buildings, apartments, hospitals, motels. AIRditioners assure initial economy, performance and style in new buildings. And they're ideal for remodeling existing ones . . . replacing unsightly radiators with attractive heating-cooling units.

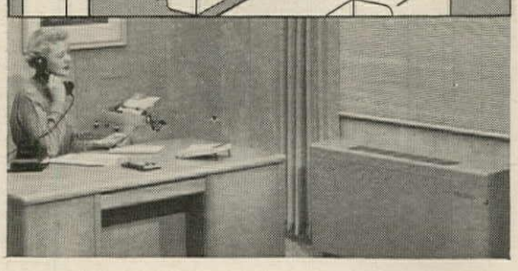
*Ask the Modine representative listed in your classified phone book for Bulletin 755 — or write Modine Mfg. Co., 1507 DeKoven Ave., Racine, Wisconsin*



**FINGERTIP** control permits room occupants to select their degree of comfort.



**NO DUCT WORK** is needed. AIRditioners use same piping for water supply and return, plus drain . . . cost less to install.

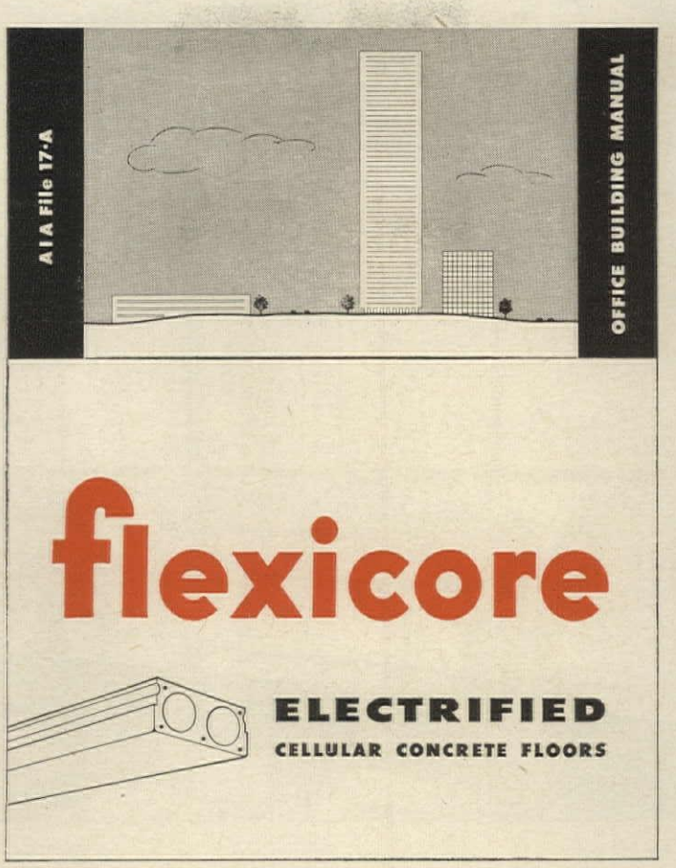


**A CHOICE** of four enclosure types in capacities from 2/3 to 2 tons.



Modine Airditioners*

*Trademark *In Canada:* Sarco, Ltd., Toronto A-1314




# How to Electrify Precast Concrete Floors

This new manual on Flexicore Electrified Floors is for architects, engineers and contractors.

It gives the architect the overall picture on the use of this system in a one-story, two-story or multiple-story office building, including savings in fireproofing, construction time and materials.

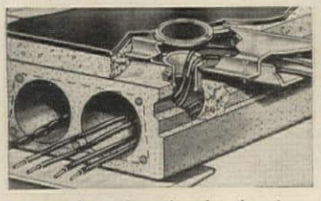
It gives the structural engineer design information on the framing for Flexicore long-span construction, plus typical structural details and a design example.

It gives the electrical engineer specific detailed information about this underfloor electrical distribution system, and includes typical distribution layouts.

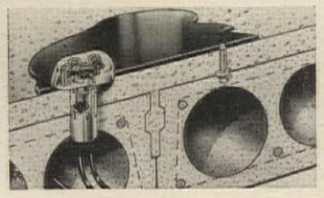
It shows the electrical contractor the step-by-step installation of Conduflor electrical fittings with photographs.

It gives the general contractor information he needs to handle a Flexicore electrified job.

For a copy, write or phone your nearest Flexicore manufacturer, or The Flexicore Co., Inc., Dayton 1, Ohio.



Wiring drops from header duct into cell at handhole junction.



Wiring then runs either way through cell to floor outlet.



To install outlet: drill hole at outlet location.



Next, install fitting in floor and fish wire.



Last, attach electric or telephone outlet box.

**flexicore® ELECTRIFIED FLOORS**
**with Conduflor® ELECTRICAL FITTINGS**

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The Alabama Cement Tile Co.
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Flexicore Company of Colorado
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Mid-West Concrete Pipe Co.
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Anchor Concrete Products, Inc.
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Extensive use of Coolite glass in sidewall sash in the Thomy Lafon Elementary School, New Orleans, fits the aims of architects, Curtis & Davis, to obtain "the ultimate in scientific achievement for natural lighting . . . a truly functional architecture adapted to human values and physical needs." Coolite, glare reduced, floods classrooms with softened, glare-free light . . . absorbs up to 50% of solar heat . . . makes rooms appear larger, friendlier.

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Architects and Engineers: Skidmore, Owings & Merrill
Photo: Ezra Stoller



**GLASS COMPANY**

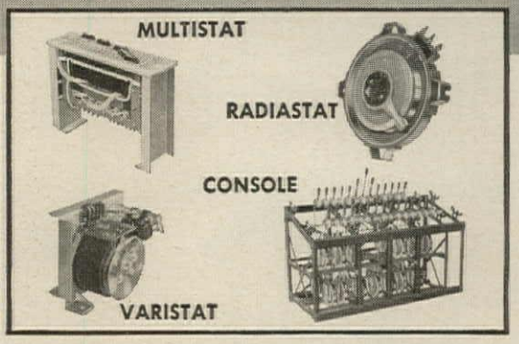
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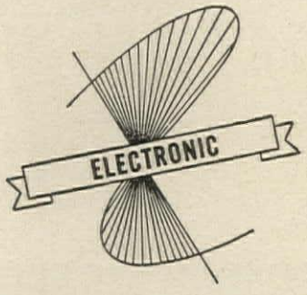
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# One source for all lighting control

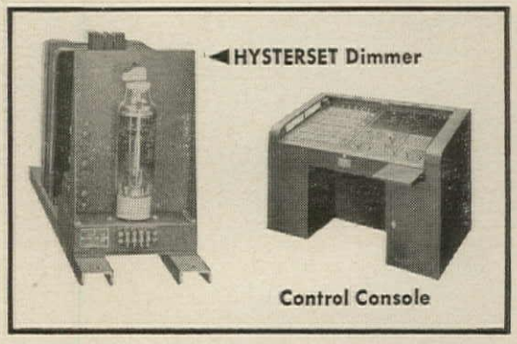


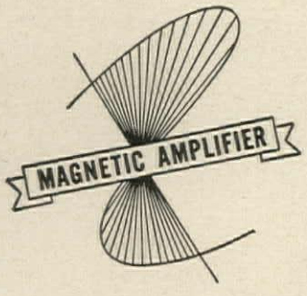

. . . for full range, flickerless and efficient control of incandescent and fluorescent lighting in smallest size. The 2.5 KW VARISTAT, the 6.6 and 8 KW RADIASTATS and the 6 and 12 KW MULTISTATS are available for non-interlocking or interlocking control, manual or remote-control motor operated. BULLETINS 76, 76F and 76M.



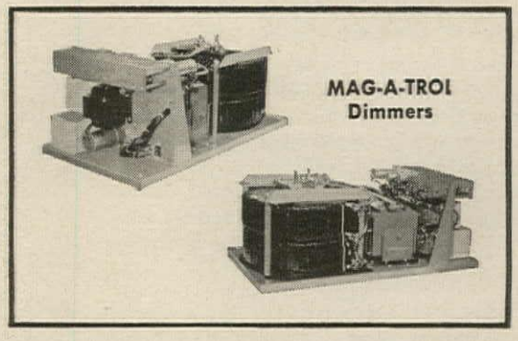



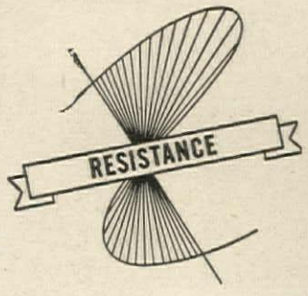

. . . for miniature remote control of lighting, HYSTERSET electronic controls, with remote control console and reactance dimmers, feature single tube per circuit, fast response, miniature pilot controls, extreme flexibility of circuit arrangement, mastering, presetting, and minimum maintenance. BULLETIN 74.



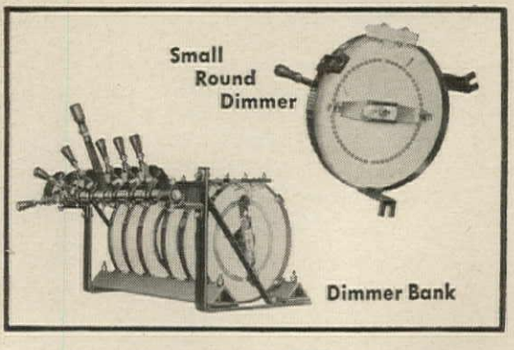




. . . for large theatres, auditoriums or TV studios . . . newest concept in lighting control. MAG-A-TROL magnetic amplifiers feature wide load range, instantaneous response, miniature low-power controls, and *no maintenance*. Ratings from 2.5 to 25 KW per unit. BULLETIN 74 MA.




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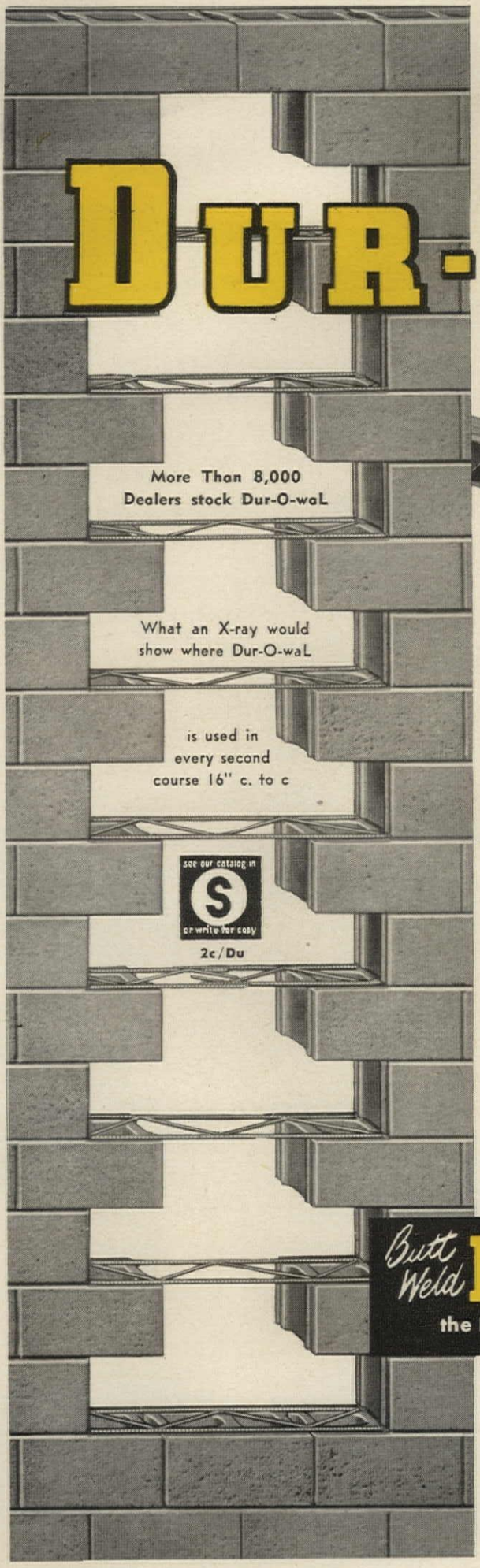


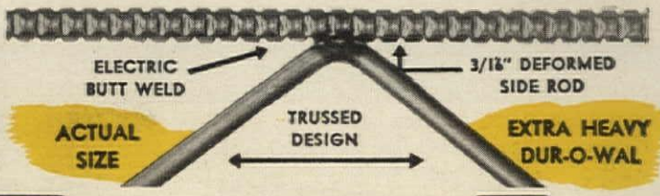

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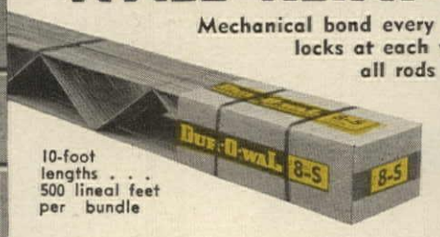

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Mechanical bond every 8 inches of wall . . . Two mortar locks at each weld . . . Electric butt welds place all rods on a single plane; make possible uniform mortar joints . . . Trussed design causes side rods to work together . . . Conforms to ASTM std. A-82-34 for high tensile steel . . . 6-inch lap at splices develops continuity and maintains reinforcing strength . . . Deformed side rods for maximum bond strength.




### SELECTION TABLE

| Wall Thickness | 4 in. | 6 in. | 8 in. | 10 in. | 12 in. | 13 in. |
|---|---|---|---|---|---|---|
| Extra Heavy Dur-O-waL | 4-EH | 6-EH | 8-EH | 10-EH | 12-EH | 13-EH |
| Wt. per 1000 lin. ft. | 247 lb. | 250 lb. | 257 lb. | 266 lb. | 276 lb. | 282 lb. |
| Standard Dur-O-waL | 4-S | 6-S | 8-S | 10-S | 12-S | 13-S |
| Wt. per 1000 lin. ft. | 178 lb. | 180 lb. | 187 lb. | 196 lb | 207 lb. | 212 lb. |

Furnished in either bright basic or galvanized steel. Specify Drip Section Dur-O-waL for Cavity Walls.

NOTE — In determining whether to specify Standard weight or Extra Heavy weight Dur-O-waL, comparisons in following table should be properly evaluated:

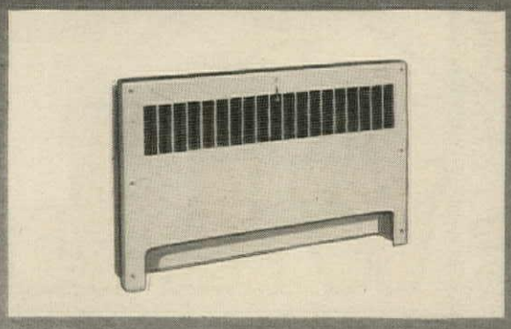
| | Weight lbs. tensile steel per lin. ft | Surface bond area—sq. in. per lin. ft. | Number of mortar locks per lin. ft. |
|---|---|---|---|
| Standard weight Dur-O-waL | 0.19 | 11.18 | 3 |
| Extra Heavy Dur-O-waL | 0.26 | 14.14 | 3 |

Butt Weld **DUR-O-WAL®** with RIGID TRUSSED Design

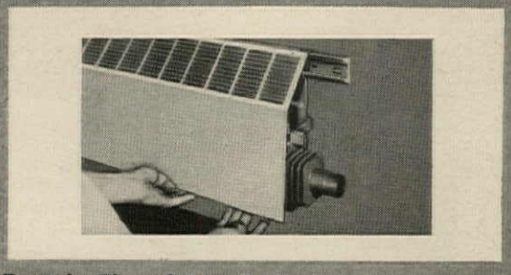
**the Backbone of Steel for EVERY masonry wall**

**Phone, wire or write Dept. 3-H for additional information about Dur-O-waL**

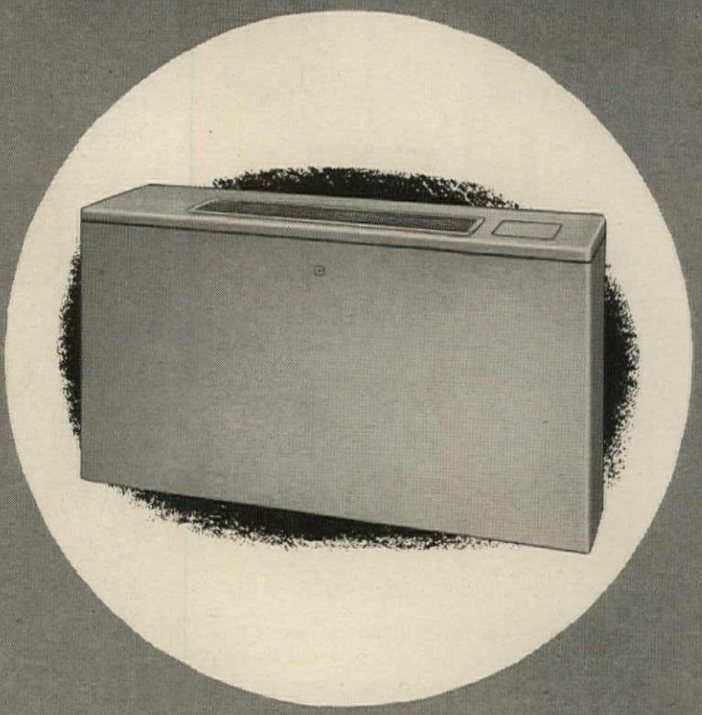
Dur-O-waL Div., Cedar Rapids Block Co., **CEDAR RAPIDS, IA.** Dur-O-waL Prod., Inc., Box 628, **SYRACUSE, N.Y.** Dur-O-waL of Ill., 119 N. River St., **AURORA, ILL.** Dur-O-waL Products of Ala., Inc., Box 5446, **BIRMINGHAM, ALA.** Dur-O-waL Prod., Inc., 4500 E. Lombard St., **BALTIMORE, MD.** Dur-O-waL Div., Frontier Mfg. Co., Box 49, **PHOENIX, ARIZ.** Dur-O-waL, Inc., 165 Utah St., **TOLEDO, OHIO**



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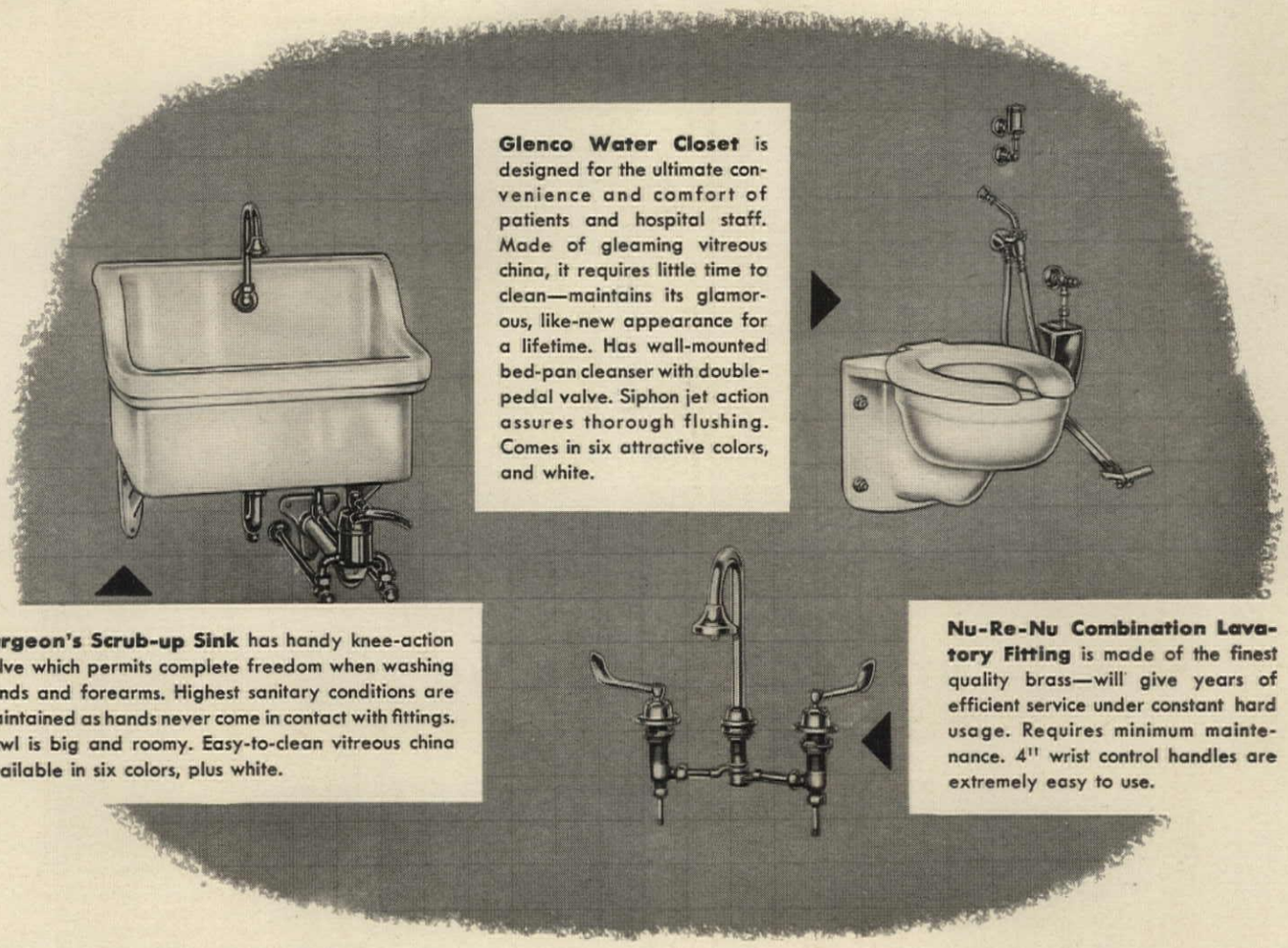


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*Stanley Magic Carpet Controls open doors automatically to make passage through terminal entranceways pleasantly easy, whether travelers (about 1,200,000 yearly) carry only briefcases or armfuls of luggage.*



*Thanks to Stanley Magic Carpet Controls between kitchen and dining room, service to in-a-hurry diners is speeded up, kitchen noises and odors do not enter dining area. Sliding doors at food service entrance, through which food containers move to and from planes, are operated by Stanley Magic Eye Controls.*

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*Movement of baggage trucks between planes and terminal is accelerated by Stanley Magic Eye Controls that open doors automatically, making it unnecessary for drivers to stop, leave trucks and open and close doors manually.*

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May we tell you more? Just write for information about our complete line of modern, low-cost acoustical insulations.

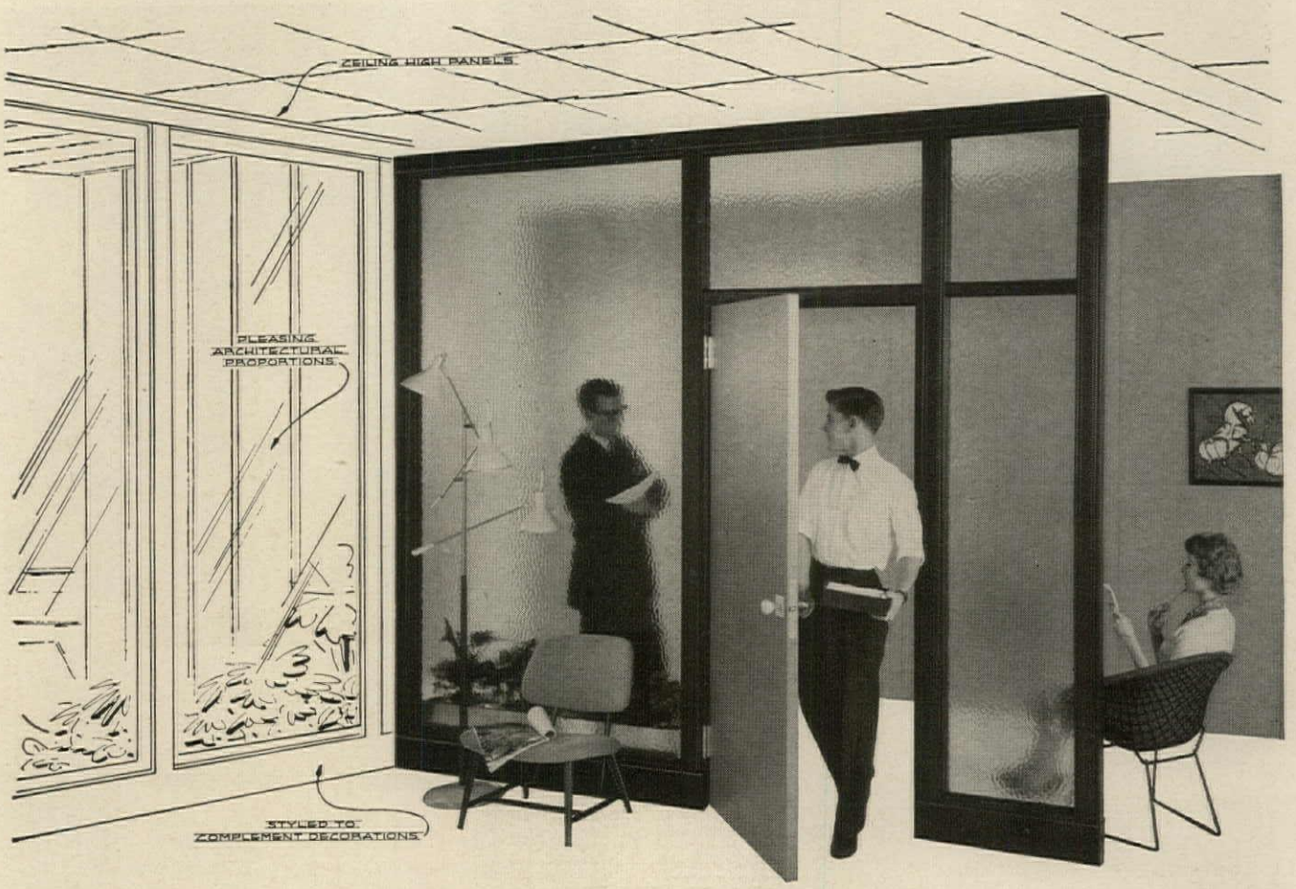
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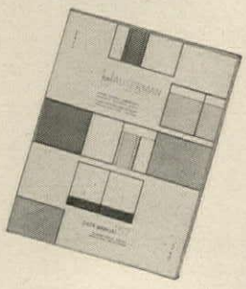
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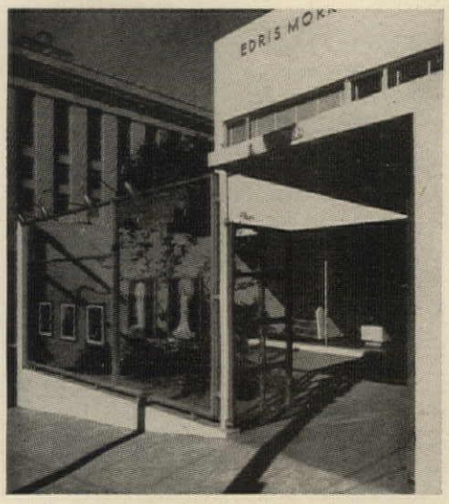
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*City* _____ *State* _____



# Books

## ... structure ... gardens ... real estate ... art



*Studio for a West Coast photographer was designed by Pietro Belluschi. The glass screen encloses a garden entrance.*

**SMALL COMMERCIAL BUILDINGS.** By Richard W. Snibbe. Published by Reinhold Publishing Corp., 430 Park Ave., New York 22, N. Y. 216 pp. 9″ x 12″. Illus. $13.50

It would be helpful indeed if the owners, architects and builders of shops and showrooms across the country could have a look at this collection of "rights" before proceeding to perpetrate more of their "wrongs." But as the number of small commercial structures continues to increase each year without much regard to design quality, chances for the success of the book's mission remain slender.

Despite this unhappy prospect, those who care to study the book's review of 100 well-executed designs (many of which have already appeared in FORUM) may find some reason to hope that the under-$100,000 building is not inevitably doomed to ugliness.

**STRUCTURES.** By Pier Luigi Nervi; translated by Giuseppina and Mario Salvadori; foreword by Mario Salvadori. Published by F. W. Dodge Corp., 119 W. 40th St., New York 18, N.Y. 112 pp. 7½″ x 10″. $6.95

Nervi, perhaps our only modern master builder, lays before the readers of this book the ways and uses of his various skills, not the least of which is his ability as teacher and leader. It is a dazzling display of the Italian engineer's accomplishments, informative and inspiring. If the reader is disappointed, it is only because he has already seen most of Nervi's work in the US magazines.

In exploring the potentialities of reinforced concrete (more than a *medium* to Nervi—almost a language), he goes as far as current physical knowledge will allow. Then he confesses his belief that "a superior and purely intuitive re-elaboration [of mathematical results] is necessary to penetrate the mysteries of the structural world."

Excellent pictures of his "form resistant" thin-shell systems help those who might otherwise have difficulty following.

**TROPICAL ARCHITECTURE.** By Maxwell Fry and Jane Drew. Published by Reinhold Publishing Corp., 430 Park Ave., New York 22, N. Y. 320 pp. 10″ x 7½″. Illus. $10

The building boom in tropical areas has now found its spokesman. This comprehensive volume, a "How To" for building in hot-humid climates, enumerates both the problems and the triumphs of tropical construction. It encourages the conclusion —especially for the architect who would add to his training the disciplines of anthropology, sociology, meteorology, toxiology and heliography—that opportunity beckons from the equator.

**PLANNING FACILITIES FOR HEALTH, PHYSICAL EDUCATION AND RECREATION.** Revised Edition. Published by Athletic Institute, Inc., 209 S. State St., Chicago 4, Ill. 154 pp. 8½″ x 11″. Illus. $2.50. Paperbound

This booklet is a by-product of a National Facilities Workshop held a year ago at Michigan State University and sponsored by the Athletic Institute and 14 national agencies. Included are suggestions on the functional development of all types of sports areas, playground, parks, stadiums, camps, gymnasiums, swimming pools, recreation buildings, health units and athletic fields. It also includes data on heating, lighting, painting, traffic flow, spectator seating, floodlighting, ventilation, surfacing, equipment and space requirements.

**JAPANESE GARDENS.** By Jiro Harada. Published by Charles T. Branford Co., 551 Boylston St., Boston 16, Mass. 160 pp. 8½″ x 11½″. Illus. $8.50

There can be few more persuasive guides to the beauty of Japanese gardens and the value of Japanese culture than this handsome and instructive volume. Dr. Harada is also author of the authoritative (but out of print) *Gardens of Japan* and *The Lesson of Japanese Architecture.*

*continued on p. 192*





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See our catalog in the Architectural File (32a/AL) and in the Industrial Construction File (12j/AL) of Sweet's Catalog.

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161 Sixth Avenue, New York 13, N. Y.

**CAPITAL FORMATION IN RESIDENTIAL REAL ESTATE: TRENDS AND PROSPECTS.** By Leo Grebler, David M. Blank and Louis Winnick. Published by Princeton University Press, Princeton, N. J. 519 pp. 6¼" x 9¼". $10.00

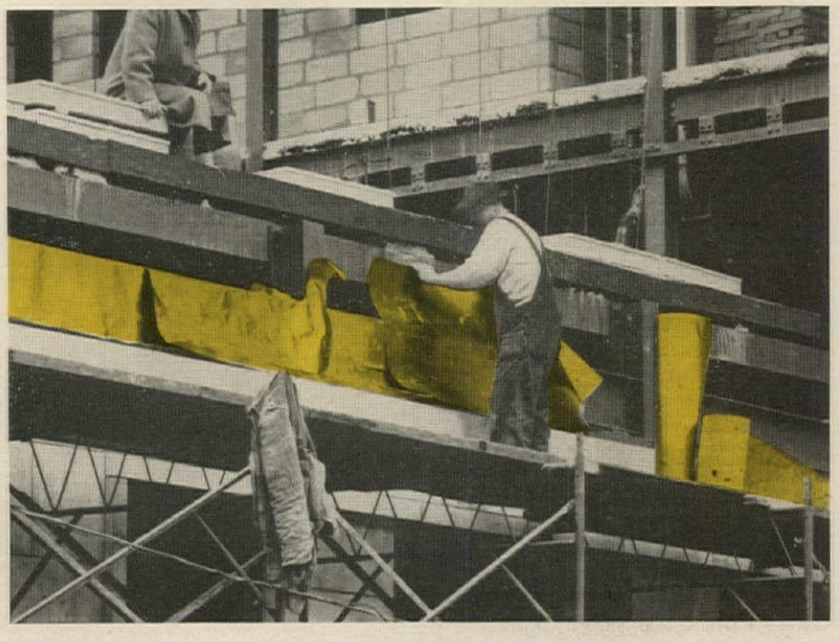
There is little question that residential real estate is one of the most important sectors of the American economy. But there have been many questions as to trends in the construction and financing of residences, factors behind such trends, and prospects for the future. It is these questions that this volume seeks to answer.

The authors' first objective is to measure and otherwise describe the formation and financing of capital in nonfarm residential real estate from about 1890 to 1950, and to provide information on subsequent years whenever it is available. They also try to identify the strategic factors—such as population growth and government policies—that have determined trends in this formation and financing. Finally they look ahead to see what their appraisal of the past and present should mean to the future. Their emphasis throughout is on secular trends, although cyclical data are used whenever necessary.

Underwritten by the National Bureau of Economic Research, the study is a valuable addition to the business or private real estate library.

**MEDIEVAL AMERICAN ART.** By Pál Kelemen. Published by Macmillan Co., 60 Fifth Ave., New York 11, N. Y. 746 pp. 11¼" x 8½". Illus. $15

A condensation in one volume of the classic, two-volume work. No significant sacrifice, in terms of text or illustration, will be noted by the general reader.



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## BOOKS RECEIVED

STONEHENGE. By R. J. C. Atkinson. Published by Macmillan Co., 60 Fifth Ave., New York 11, N.Y. 210 pp. 5½" x 9". Illus. $3.50

SCHOOL CONSTRUCTION 1955-1956. Published by Councils and Education Press Ltd., 10 Queen Anne St., London, W.1, England. 154 pp. 7¼" x 9¾". Illus. About $2.25

IMPROVING THE SCHOOL ENVIRONMENT. By Raymond C. Schneider and Jon S. Peters. Published by School Planning Laboratory, Stanford, California. 120 pp. 8½" x 11". Illus. $4

SOURCES OF ART NOUVEAU. By Stephen Madsen. Published by George Wittenhorn Inc., 1018 Madison Ave., New York 21, N.Y. 488 pps. 8" x 10". Illus. $18.50

NATIONAL STANDARDS IN A MODERN ECONOMY. By Dickson Reck. Published by Harper & Bros., 49 E. 33rd St., New York 16, N. Y. 372 pp. 6½" x 9½". $5

SIMPLIFIED PROBLEMS IN STRENGTH OF MATERIALS AND STRUCTURAL DESIGN. By Ephraim Viertels. Published by Arco Publishing Co., 480 Lexington Ave., New York 17, N. Y. 636 pp. 6¼" x 8½". $5

APPLIED STRENGTH OF MATERIALS. By Alfred Jensen. Published by McGraw-Hill Book Co., 330 W. 42nd St., New York, N.Y. 343 pp. 6¼" x 9¼". $5.75

## TECHNICAL PUBLICATIONS

*A selection of new handbooks, technical reports, brochures and commercial leaflets, noteworthy for their information content or pictorial format or both.*

**CRSI DESIGN HANDHOOK:** Revised 1956. Published by the Concrete Reinforcing Steel Institute, 38 S. Dearborn St., Chicago 3, Ill. 400 pp. $6

A manual greatly simplifying the design of reinforced concrete structures, with quick-reference tables for computing com-

*continued on p. 200*

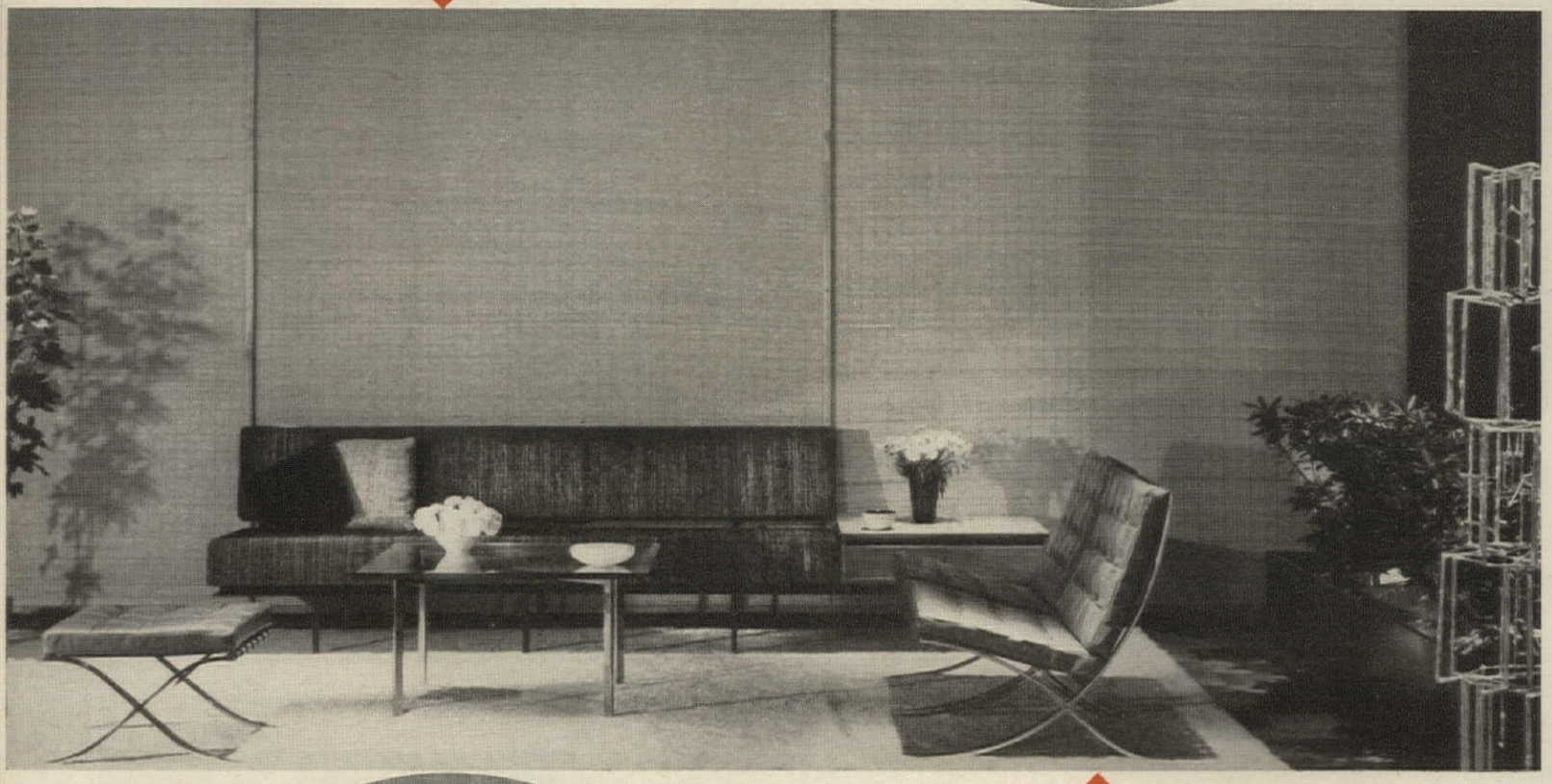
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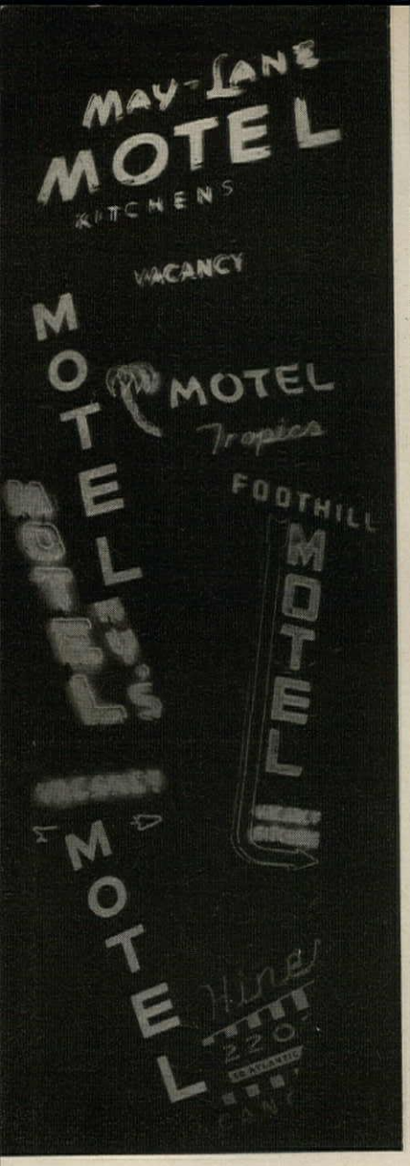


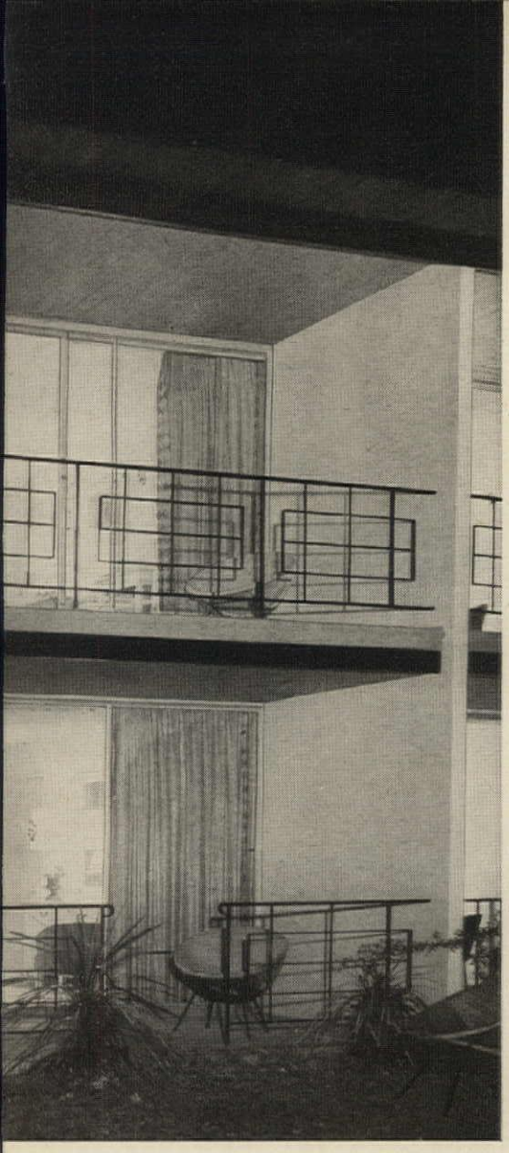
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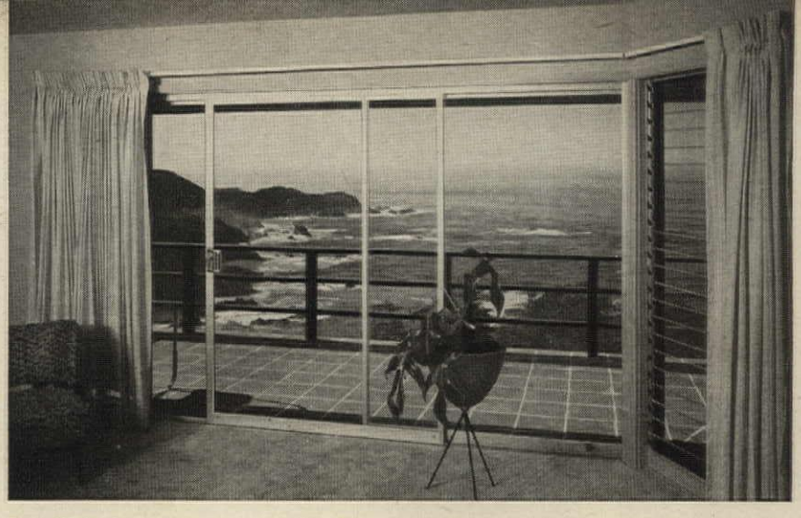


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**Beautiful view** of the ocean makes this motel room memorable to guests. Ador alumilite finished sliding glass doors are weathersealed for even the most extreme exposure locations.



**Sliding glass doors** used in every unit of this luxury motor hotel are a distinctive design factor which attracts guests. (Tickle Pink Motor Inn, Carmel, Calif.)

# with sliding glass doors

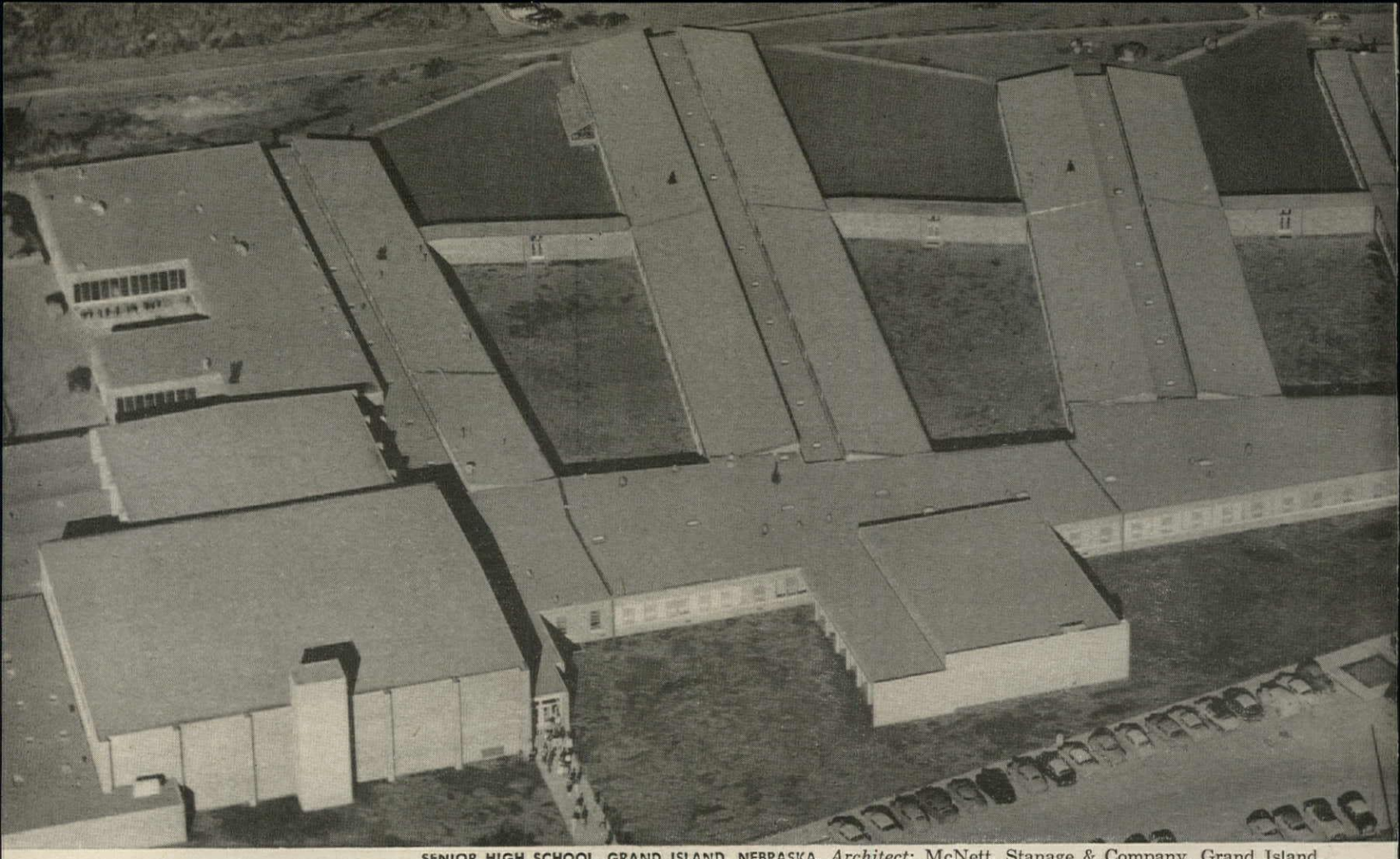
**Major new trend** in motel and hotel design is the dramatic use of the sliding glass door. With some 56,258 motels competing for the tourist's dollar across the country, the open-view room with its sliding glass door has become a big factor in successful motel operation. Motels and hotels from coast to coast are finding the use of Ador all-aluminum sliding glass doors a real competitive advantage.

**This sliding glass door trend** is motivated by the need for open display of the motel room to the guest—but beyond this indoor-outdoor appeal there are many practical advantages. Guests and luggage find easy entry through the fingertip-action Ador doors. Furniture can be readily transferred from room to room through the wide openings and easily moved over the low Ador threshold. Of special importance is the Ador's exterior lock arrangement which can be keyed and master-keyed.

**But, perhaps the greatest value** the sliding glass door imparts is a feeling of luxury — at minimum cost. Details such as custom design lucite grip hardware and beautiful satin-silver finish are standard on all Ador doors. Write Ador Sales, Inc., Fullerton, California for complete information.

**The attractive indoor-outdoor atmosphere** of this motel is created by Ador sliding glass doors in each unit.





**SENIOR HIGH SCHOOL, GRAND ISLAND, NEBRASKA.** *Architect:* McNett, Stanage & Company, Grand Island. *General Contractor:* H. S. Holtze Construction Company, Sioux City, Iowa. *Steel Fabricator:* Paxton & Vierling Steel Company, Omaha, Nebraska.

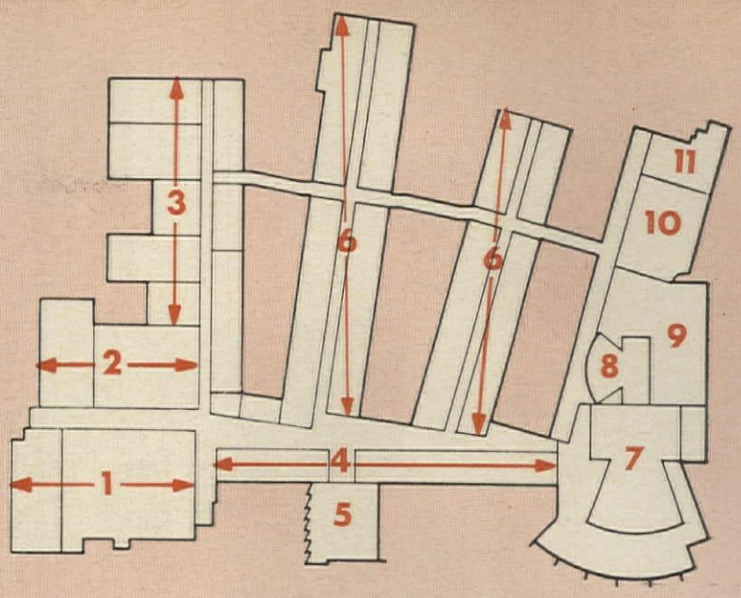
# Functional, economical "finger plan" of Grand Island

**THE STRUCTURAL STEEL FRAMEWORK NEARING COMPLETION.** Starting date for the school was October, 1953, and it was completed in July, 1955. Total cost of the school was $2,622,795.00.



UNITED STATES STEEL






1. Boys' Gymnasium
2. Girls' Gymnasium
3. Vocational Shops, Arts and Homemaking
4. Administrative
5. Library
6. Academic classrooms
7. Auditorium
8. Little Theater
9. Music rooms
10. Cafeteria
11. Kitchen

# High School *again illustrates versatility of Structural Steel!*

The basic design of the new senior high school in Grand Island, Nebraska, consists of four "fingers," or wings, containing classrooms, radiating from a main administrative area. The "fingers," which extend toward the west, are oriented at slightly different angles from each other in order to secure the best lighting and ventilating situations. And, in addition to being connected to the administration area, each "finger" is joined to the others by means of a corridor—for quick passage from one wing to another. The school is sized to accommodate approximately 1,400 students. All areas are of one-story construction.

The unique building houses two gymnasiums, one of which will seat 2,600 spectators for varsity basketball games. The main auditorium will accommodate 1,500 people comfortably, and the Little Theater can seat 300. In both, stages are equipped to handle even the most intricate of productions. The ultramodern cafeteria, which turns out 600 to 700 meals with ease during the short lunch period, may be converted quickly into a study hall through the use of motorized rolling doors. The whole effect of the school is one of efficiency coupled with luxury. Yet, it was built at a cost of only $10.96 per square foot.

Approximately 1,017 tons of Structural Steel were used in the framework of the new building—contributing greatly to the economy of construction. As is usually the case, when economy must go hand-in-hand with imaginative architectural ideas, Structural Steel is called upon. And why not? Structural Steel is versatile.

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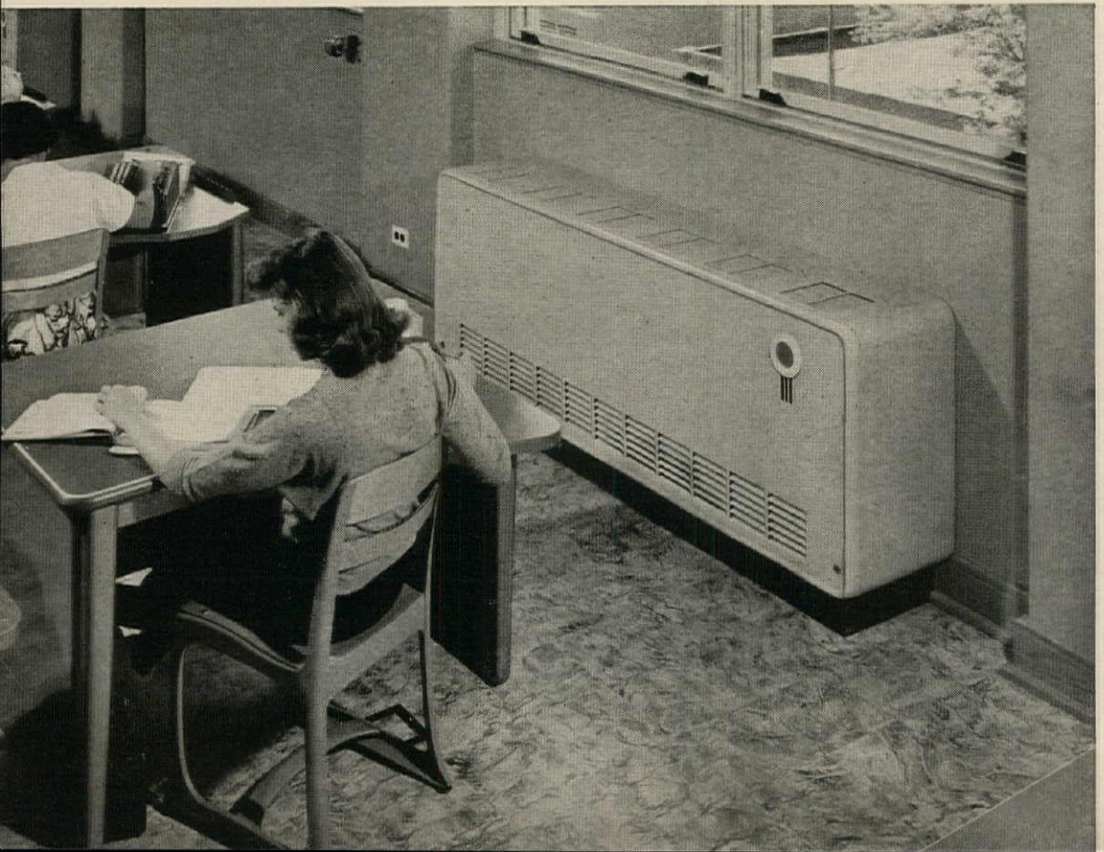
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## Progressive Denver School

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Superintendent of Schools: Dr. Kenneth E. Oberholtzer;
Architect: Jamieson & Williams; Engineer: Ken Murray.



HerNel-Cool Units in each room are now providing heating, ventilating, and natural cooling. Only the addition of a chiller in the boiler room is necessary for complete hot weather air conditioning.

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## Simple chiller installation will add air conditioning to existing unit ventilator system.

Since its founding in 1916, the Emily Griffith Opportunity School in Denver, Colorado, has been a symbol of progressive thinking in education.

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HerNel-Cool units provide individual temperature control for each room, automatically. Most of the year they provide heat, ventilation, or natural cooling (with outside air) as the room requires. When a chiller is installed in the boiler room, HerNel-Cool units also function as air conditioners. In hot weather, the units switch automatically to mechanical cooling, with chilled water circulating in the same piping that carries hot water during cold weather. The cost is far less than separate heating and air conditioning systems—both for installation and operation.

Thoroughly tested in hot, humid climates, HerNel-Cool units have exceeded every requirement. The system is flexible, too. Units can be installed now where they are needed most—the system can later be extended whenever you wish.

Would you like more information? We will be glad to send you our new 20 page book, "HerNel-Cool AIR CONDITIONER for Schools". Just write to Herman Nelson Unit Ventilator Products, American Air Filter Company, Inc., Louisville 8, Kentucky.

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AMERICAN AIR FILTER COMPANY, INC.

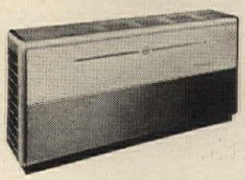
American Air Filter Company, Inc., System of Classroom Cooling, Heating and Ventilating



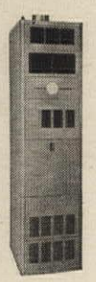
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### There is a Herman Nelson Unit Specifically Designed to Give You More Classroom Comfort Per Dollar

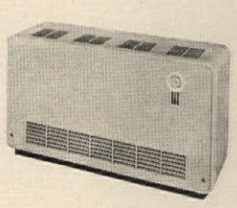
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**HOT WATER, STEAM**
Herman Nelson Unit Ventilators with patented DRAFT|STOP control downdrafts without adding to the classroom heat load, provide ideal classroom climates.



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plex stress and load problems, engineering diagrams and formulae.

**RICHMOND 1956 HANDBOOK** of Engineered Tying Devices, Anchorages and Accessories for Concrete Construction. Published by the Richmond Screw Anchor Co., 816 Liberty Ave., Brooklyn 8, N. Y. 45 pp. No charge

A catalogue which is also a complete run-down of latest concrete form-tying and anchoring methods, with a wealth of technical diagrams and information.

**PERLITE DESIGN MANUAL.** Published by the Perlite Institute, 45 W. 45th St., New York 36, N. Y. 80 pp., looseleaf. No charge.

In five well-designed, data-filled sections, a complete handbook on the use, design and specification of perlite lightweight aggregate concrete for roof decks, floors, curtain walls; also perlite-gypsum plasters for fireproof and acoustical walls; charts, tables, diagrams, architectural details.

**BUILDING COST MANUAL.** Prepared under the Joint Committee on Building Costs of the Chicago Chapter of the AIA and the Appraisers Division of the Chicago Real Estate Board. Published by John Wiley & Sons, Inc., 440 Fourth Ave., New York 16, N. Y. 367 pp. 233 illus. $15

An authorative, up-to-date manual for estimating cost data on 150 building types, based on actual construction costs, with sectional map showing conversion factors for local areas.

**BRIDGING.** Steel Joist Institute Technical Bulletin No. 1 BR. Published by the Institute, Dupont Circle Building, 1345 Connecticut Ave., N.W., Washington 6, D. C. 15 pp. No charge

Report, based on extensive tests by Dept. of Civil Engineering, Washington University, on effects of various types of bridging on the behavior of open-web steel joists, shortspan.

**FIRE STATION DESIGN:** Vol. 5. Published by the Circul-Air Corp., 575 E. Milwaukee Ave., Detroit 2, Mich. 64 pp. No charge

Symposium of ideas, plans and sketches for fire houses submitted by architects, fire chiefs and technical writers affiliated with fire services, including 100 floor plans, prospectives and data on newest US fire stations.

**NOMOGRAM FOR FINDING OUTLET AREA FOR DOWNWARD JET OF HEATED AIR.** Published by the Barber-Colman Co., Dept. 766, Rockford, Ill. No charge

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**RUST-OLEUM 1957 COATINGS MANUAL.** Published by the Rust-Oleum Corp., 2799 Oakton St., Evanston, Ill. 32 pp. Request Form No. 256. No charge

A handsome catalogue in full color with over 100 color chips, which is also a compendious review of corrosion problems and special protective coatings to meet them.

**THE HERMAN MILLER COLLECTION.** Published by Herman Miller Furniture Co., Zeeland, Mich. $5

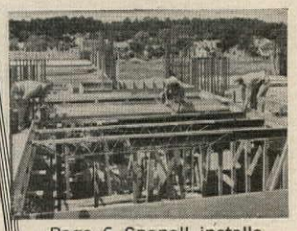
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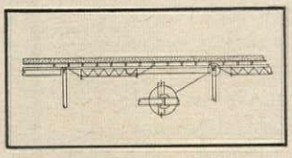
**APPRAISAL AND VALUATION MANUAL**—1956-57. Published by the American Society of Appraisers, 119 W. 57th St., New York 19, N. Y. $15

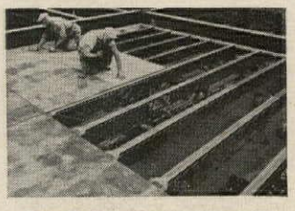
A collection of articles on all phases of real estate appraisal by different authors, plus a record of Society proceedings.






Page 6. Spanall installs fast and easy.


Page 5. Spanall applies to any type of poured concrete construction.


Page 7. Plywood decking laid directly on Spanall.


Page 2. Spanall replaces vertical shoring, frees work areas below forms.

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*Schaumberg & Freeman, architects, Lincoln; Kingery Construction Company, general and masonry contractor, Lincoln.*





**ARIZONA** Production line methods were used in building five hundred 8" cinder block homes under the Wherry Project Act on the Ft. Huachuca Army Base. Masonry of all the homes was reinforced with Key-Wall. "We got stronger walls with 5 courses reinforced with Key-Wall than with 3 courses reinforced with another type, and the additional Key-Wall cost no more," states the Rubenstein Development Co., Phoenix. "We're satisfied."

*Blanton & Cole, architects, Tucson; Rubenstein Development Company, general contractor, Phoenix; Michael Guida, masonry contractor, Phoenix.*

# Builders everywhere are switching to



**TEXAS** To reduce shrinkage cracks, a fireproof concrete masonry partition in the new Dallas Memorial Auditorium was reinforced with Key-Wall. Research shows that Key-Wall gives effective resistance to cracks resulting from shrinkage of masonry. Just one of the many advantages you get when you specify and use Key-Wall. What's more, masons and helpers like to use it on the job. They don't have to be checked to be sure it goes in.

*George L. Dahl, architect, Dallas; R. P. Farnsworth Inc., general and masonry contractor, Dallas.*



**MISSOURI** John Drews, masonry superintendent, finds it easy to reinforce corners with Key-Wall in constructing the Scudder Grade School, Robertson. Here, he is lapping Key-Wall at a corner without adding thickness to the joint. It's quick and easy to do. Short lengths of Key-Wall may be cut and used without reducing reinforcement strength.

*Charles W. Lorenz, architect, St. Louis; Hankins-Hinrich Construction Co., general contractor, Clayton; Roy Elam, masonry contractor, St. Louis.*

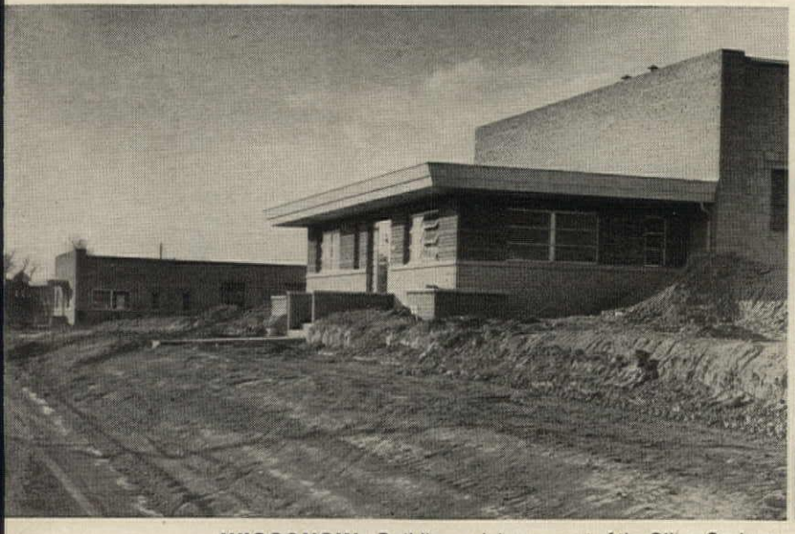


**ILLINOIS** The beauty of the Tam O'Shanter Country Club bathhouse will last for years with walls reinforced with Key-Wall. You get increased lateral wall strength with this easy-to-handle masonry reinforcement. There's no better buy.

*Samuelson & Sandquist, architects, Chicago; George S. May Business Foundation, general and masonry contractor, Chicago.*

# key-wall

## galvanized masonry reinforcement





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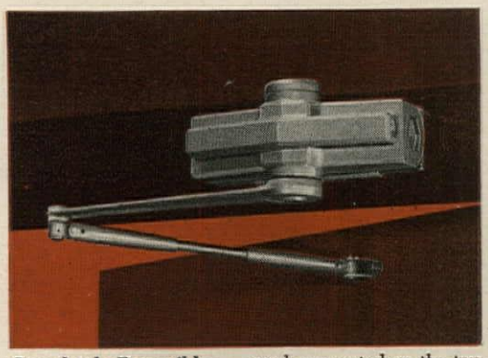
**John P. Bruecker, architect, Milwaukee;**
*Megal Construction Company, general and masonry contractor, Butler.*

Key-Wall comes in 200 foot rolls. Made for the following wall thicknesses: 4", 6", 8", 10", and 12". Available through leading building material dealers. For name of nearest dealer write Keystone Steel & Wire Company, Peoria 7, Illinois.

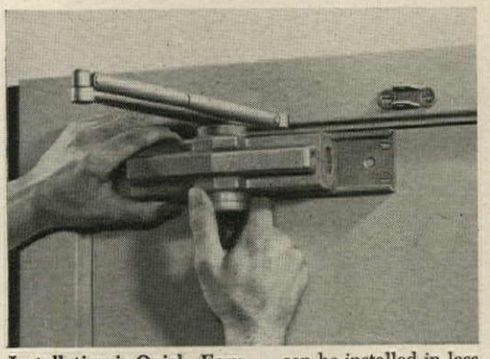


## KEYSTONE STEEL & WIRE COMPANY

**PEORIA 7, ILLINOIS**



**Completely Reversible** . . . can be mounted on the top jamb for maximum headroom on out-swinging doors.



**Installation is Quick, Easy** . . . can be installed in less than half the time of other surface-type closers.

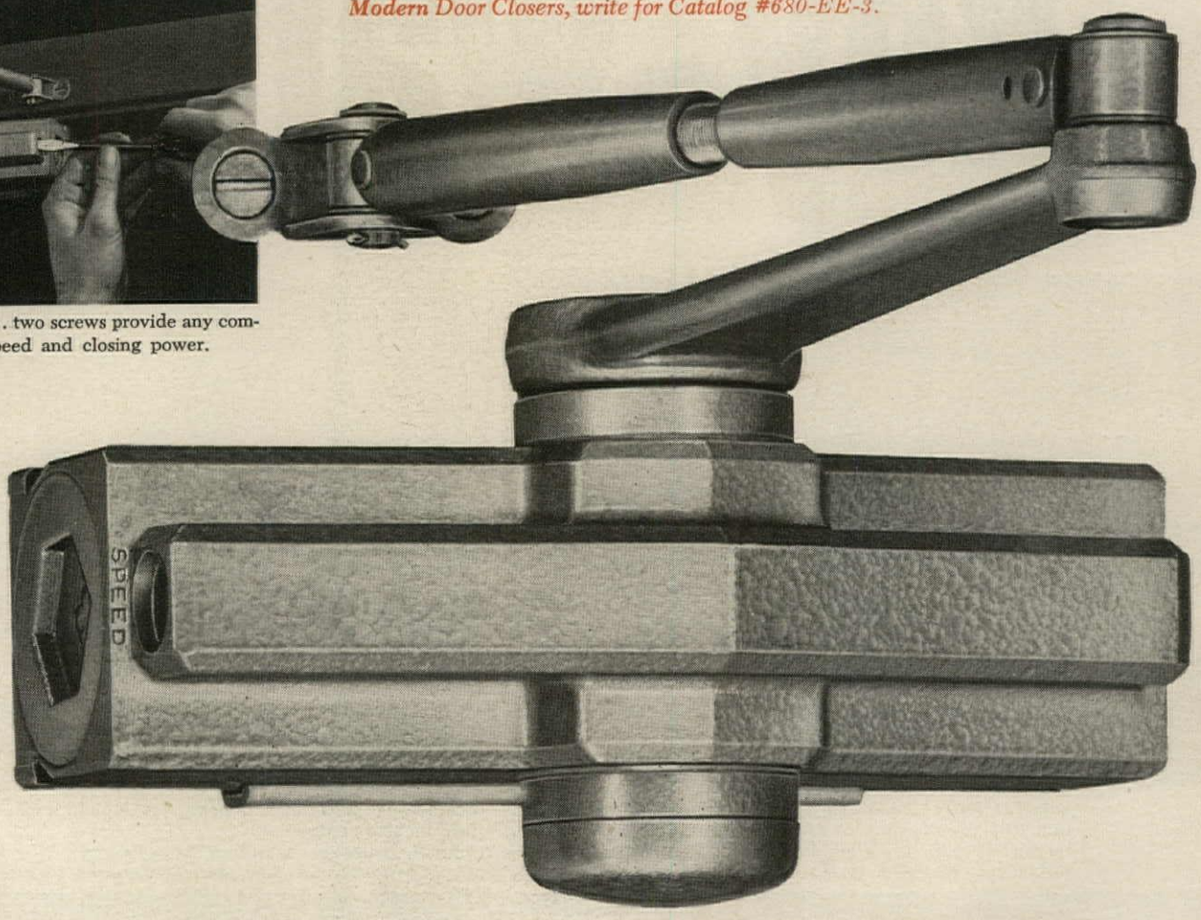


**Adjustment is Simple** . . . two screws provide any combination of swinging speed and closing power.

# modern door closer beauty

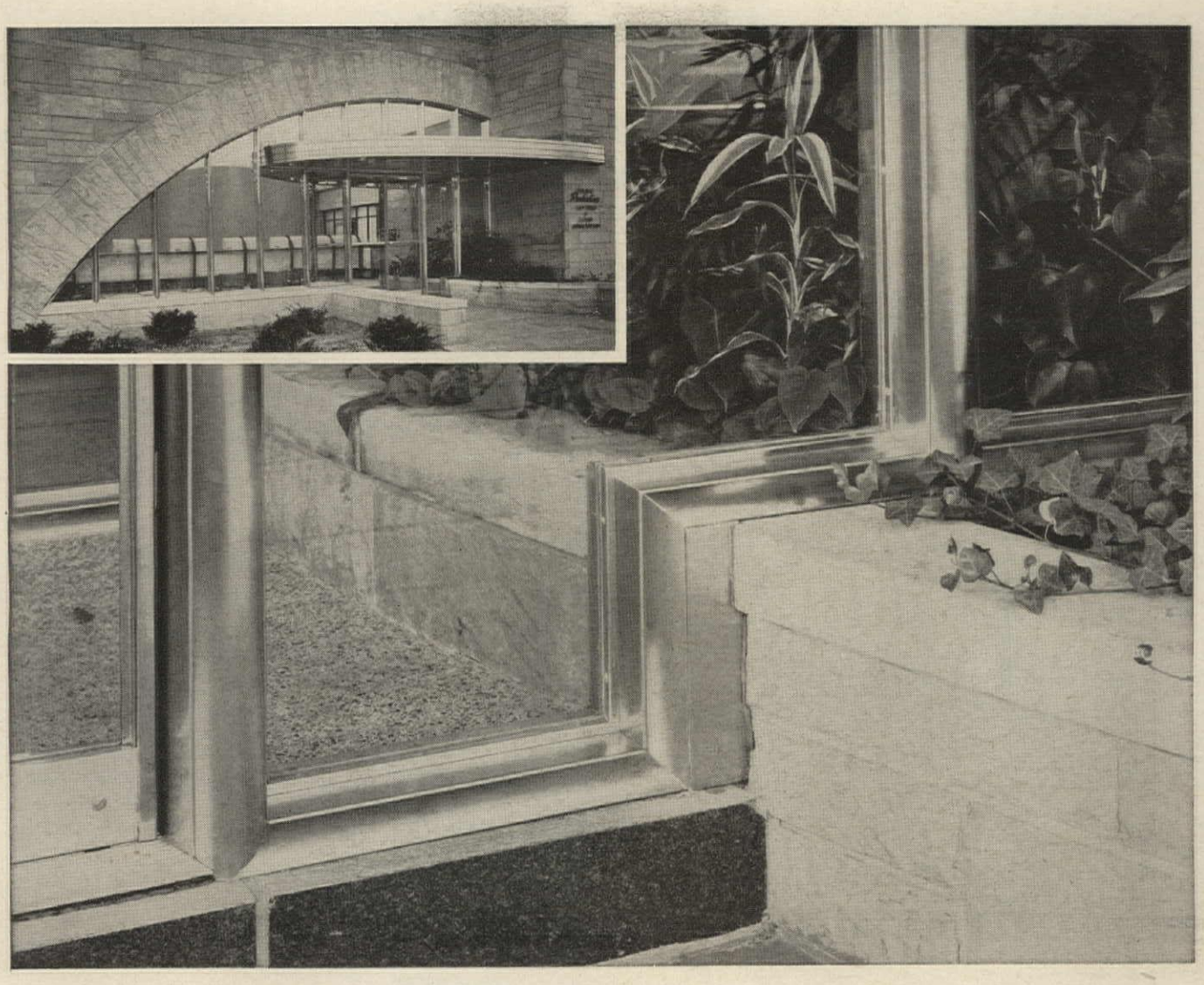
Designed and styled to match today's architectural trends, Schlage door closers reflect the clean lines of modern interiors. For the first time, you can furnish your clients with the maintenance convenience and functional superiority of surface-type closers . . . and at the same time be assured that the appearance will complement the building design. As advanced in mechanical precision as it is in external design, the Schlage door closer provides complete control throughout the entire door swing by a full rack and pinion mechanism . . . teeth are pitched for greatest strength and are sufficient to permit 230° shaft rotation. In both appearance and function, Schlage door closers meet the building requirements of contemporary architecture.

*For complete information about Schlage's* ***Modern*** *Door Closers, write for Catalog #680-EE-3.*




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LOCK COMPANY

SCHLAGE LOCK COMPANY, SAN FRANCISCO • NEW YORK • VANCOUVER, B. C. • *Address all correspondence to San Francisco*



# STONE and STAINLESS STEEL

## *Happy Lifetime Combination*

Here's an intriguing entrance design for a recently-built midwestern structure. Stone and stainless steel and glass . . . a planter that continues inside . . . two sweeping curves in opposed planes.

If there's any other material that can match the ageless, everlasting qualities of stone, it's *stainless steel.* Use it for its hardy, perennial beauty, that neither smoke, fumes nor weather can impair. Use it for its remarkable strength, greatest of all the structural metals. But above all, use stainless steel because it wears so well and lasts so long that it's actually the most economical metal you *can* use . . . the least expensive in the long run.

Keep it in mind, too, that A-L Stainless Steel is versatile—you can employ it in your structures in everything from building hardware to an entire curtain wall design. ● If we can help you with any data or engineering assistance, call on us. *Allegheny Ludlum Steel Corporation, Oliver Building, Pittsburgh 22, Pa.*

### "INFO" for Architects and Builders

1 "AL Stainless Steels for Building"—12 pages on stainless grades, properties, forms, finishes, standard "specs," uses and advantages

2 "Stainless Steels for Store Fronts and Building Entrances"—40 pages of valuable data on examples and details. AIA File No. 26D.

3 "Stainless Steel Curtain Walls"—A 24-page progress report on methods. AIA File No. 15-H-1.

*Write for Details*

**Address Dept. B-87**

WSW 6059

**For Stainless Steel in ALL Forms—call**

# Allegheny Ludlum

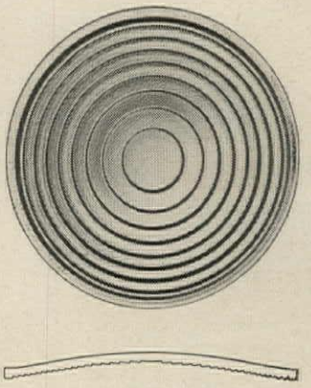
AL STAINLESS STEEL ®

**Warehouse stocks carried by all Ryerson Steel plants**

# You'll put your client in the best

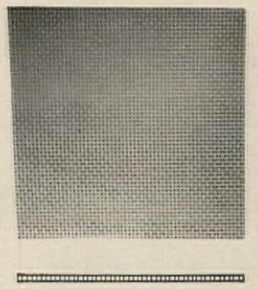
***These represent just a few of the many Corning glasses specially designed for engineered lighting applications.***





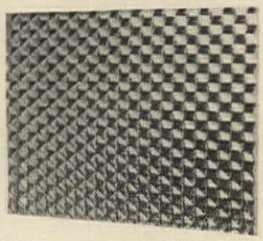
For high efficiency, uniform, general lighting with incandescent lamps, Corning PYREX Concave Lenslites are recommended. Made of a PYREX brand glass, they provide freedom from breakage even in outdoor service with high wattage bulbs. Designed on the Fresnel principle, they give exceptionally even light distribution over a wide area.





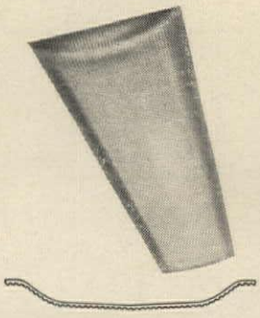
Corning Fota-Lite combines the easy-to-clean, easy-to-handle advantage of a smooth, static-free sheet of glass with the control that louvers afford. The effect is of crystal-clear cells separated by white opal louvers. Available with vertical louver pattern for 45° cutoff, and with 30° slanted louvers for offset beam lighting.

# possible light *with Engineered Lighting*



For uniform, efficient light distribution with low surface brightness, specify Corning Pattern No. 70 Low-Brightness Lens Panels. Optically correct 6-sided pyramids distribute the light in all directions.





For diffused light in the working area with reduced brightness contrast between ceiling and fixture, specify Corning Curved Alba-Lite Panels. Made of a light opal glass the curved panels afford complete diffusion, excellent brightness control free of color distortion, with a part of the light delivered above the horizontal for reduction of contrast in the ceiling area adjacent to the fixture.



Your client's offices, his people, his goods . . . all are in their best possible light . . . when you utilize the principles of engineered lighting in designing his lighting installations.

Engineered lighting is *on-the-job* lighting. It means light that is adapted, through Corning's optically engineered glassware, to the illumination needs of a specific job. It is the key to better working efficiency, comfortable seeing, increased sales. It does the job with light that glass can do best.

As the transmitting and control medium, glass determines the intensity of the light, its direction, its color-revealing fidelity, its comfort. As a part of the lighting fixture, glass also determines the fixture's attractiveness, its ability to fit into the decorative scheme . . . and its ease of maintenance and cleaning.

Corning's laboratories are continually at work to develop more applications for lighting glassware, new glasses, and new methods of controlling light with glass. The experience gained here is available to you at any time—at any stage of an installation—through Corning's staff of lighting consultants.

**It's new—it's informative**

Send, now, for your copy of Corning's new "Application Guide for Commercial Lighting Glassware." It will help you in selecting the lighting glassware that meets your specific application requirements for offices, schools, banks, public buildings, stores, displays, hospitals. Write, wire, or phone Lighting Sales Department, Corning Glass Works, Corning, New York.

**CORNING GLASS WORKS**
Lighting Sales Dept.
**64-3 Crystal St., Corning, N. Y.**

Please send me a copy of your new "Application Guide"

Name.....

Address.....

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**CORNING GLASS WORKS, CORNING, N. Y.**
**64-3 Crystal Street**

*Corning means research in Glass*



# a short cut to "finish time"

Steelcraft steel doors can help you meet completion dates on big jobs or small. This is because Steelcraft doors are **standard** doors — offering big savings in time all down the line.

They eliminate time-consuming detail in planning and specifying. They are mass-produced and factory-stocked for quick delivery. And they are shipped complete with framing and all hardware prepared for fast installation.

For any type of opening — standard or heavy-duty — in industrial, commercial or institutional buildings, Steelcraft standard steel doors are always "a short cut to finish time."

**standard steel doors by STEELCRAFT**
**MFG. COMPANY**
**ROSSMOYNE, OHIO**

STEEL Craft

THE INDUSTRY'S MOST COMPLETE LINE OF STANDARD STEEL DOORS

# what they're saying about REVERE COPPER WATER TUBE

***"It's the perfect answer for Air Conditioning Lines in existing buildings like the SOUTHWESTERN BELL TELEPHONE COMPANY,"***

Says Allen Sodemann, General Manager
SODEMANN HEAT & POWER CO.
St. Louis, Mo.



ADMINISTRATION AND EQUIPMENT BUILDING OF SOUTHWESTERN BELL TELEPHONE COMPANY, ST. LOUIS

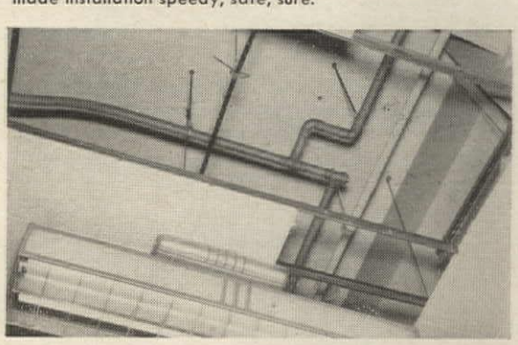
Consulting Engineers: LEO S. WEIL & WALTER B. MOSES, New Orleans, La.



**ONE OF THE 1,101 SETS** of risers around the perimeter of the building. Using solder fittings with silver alloy brazing made installation speedy, safe, sure.

"From the first time we looked over the 31-story Southwestern Bell Telephone Administration Building, we just never gave any other material a second thought . . . copper tube was it. The job had to last . . . and what's more enduring than non-rusting copper? The installation had to be made as fast as possible and with the minimum of rip-up. With the long lengths of copper tube and solder fittings requiring no wrench room or thread cutting, copper again was the answer."

It is these same attributes that make Revere Copper Water Tube the first choice of contractors, architects and engineers for radiant panel heating, hot and cold water lines, processing lines, underground service lines, drain, waste and vent lines. See your Revere Distributor for your needs.



**REVERE COPPER WATER TUBE** is made to order for small spaces like those encountered in this false ceiling. No wrench-room needed when you use Revere Copper Water Tube. The 45,000 lbs. of Type "L" Revere Copper Water Tube used were supplied by GRINNELL COMPANY, Revere Dist.

**REVERE COPPER AND BRASS INCORPORATED**

*Founded by Paul Revere in 1801*

230 Park Avenue, New York 17, N. Y.

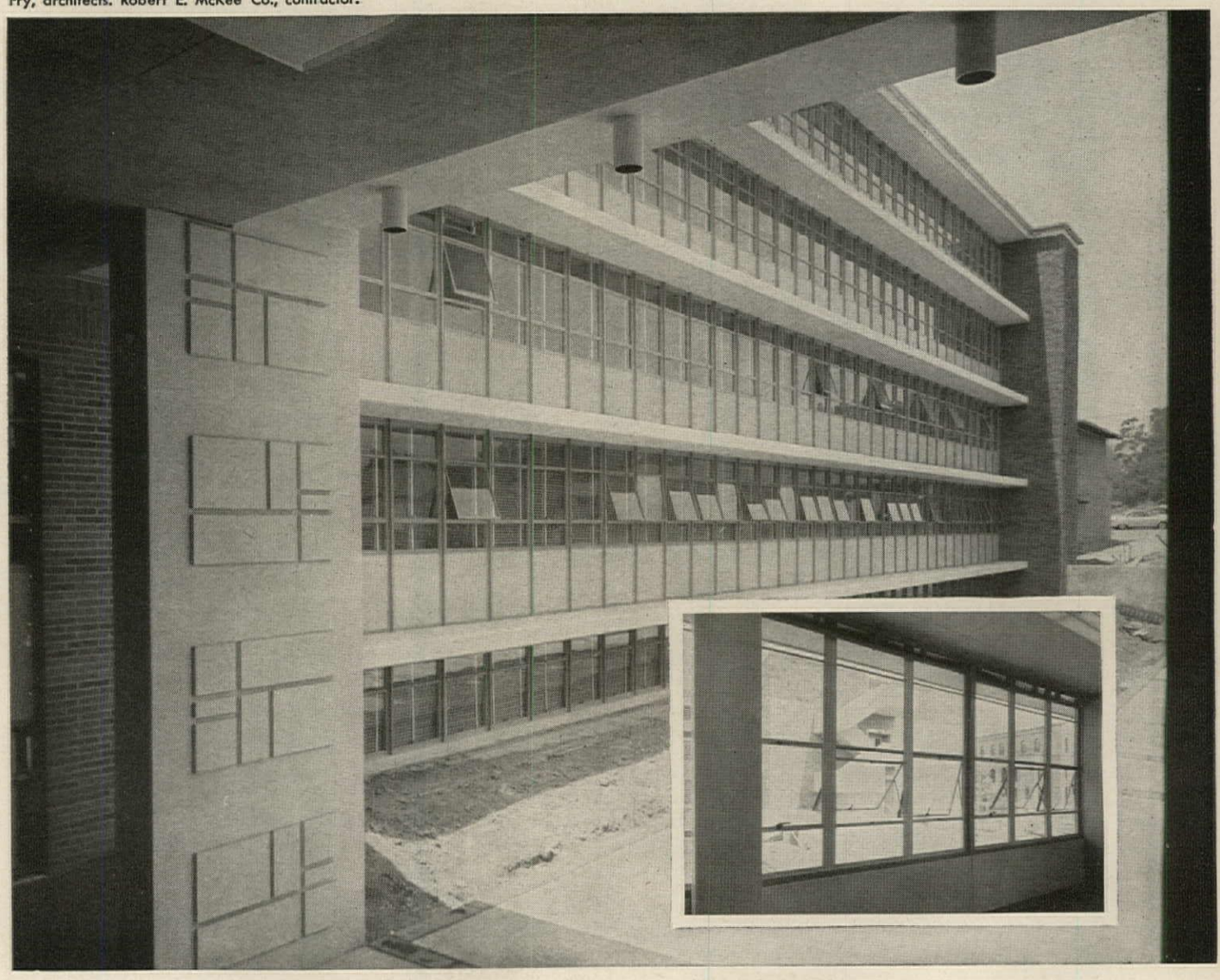
*Mills: Baltimore, Md.; Brooklyn, N. Y.; Chicago, Clinton and Joliet, Ill.; Detroit, Mich.; Los Angeles and Riverside, Calif.; New Bedford, Mass.; Newport, Ark.; Rome, N. Y. Sales Offices in Principal Cities, Distributors Everywhere.*

COPPER * BRASS * 18 01 REVERE * ALUMINUM *



University of California, general classrooms and office building, Los Angeles, Calif. Austin, Field and Fry, architects. Robert E. McKee Co., contractor.

# They're capturing WITH TRUSCON



# REPUBLIC

REPUBLIC STEEL

*World's Widest Range of Standard Steels*

# California Sunshine

## VISION-VENT WINDOW WALLS

See how effectively Vision-Vent blends with masonry to create truly imposing buildings that are completely functional.

Vision-Vent is Truscon's exciting method of fast, economical wall construction. Vision-Vent goes up like other curtain-wall systems. Fast. Easy. With this important plus—it's a wall with window already in place.

The Vision-Vent system incorporates all mass-production and installation economies of standard steel windows. Each module is complete, sill to ceiling, including fixed lights, awning-type ventilator or Truscon Double-Hung Steel Window, and insulated panel.

For design distinction, insulated panels may be furnished in *colored* porcelain enamel, stainless steel or aluminum. Panels have an insulating value equal to that of an ordinary masonry spandrel wall. They retain interior heat; they provide for air-conditioning efficiency. Wall thickness of less than 1½ inches provides extra square-feet of floor space. Light weight is reflected in structural savings.

Vision-Vent has had a tremendous success in all types of single- and multi-story applications. Truscon window engineers will be glad to study your plans and develop design details and costs. More facts in Sweet's, or send coupon.

**STEEL**

*and Steel Products*



TRUSCON "O-T" Steel Joists give you predictable and dependable load-bearing capacity. Every Truscon "O-T" Joist—short-span series—is quality protected. Each is backed by the Steel Joist Institute Seal of Approval. Be safe . . . avoid inferior quality. Specify approved Truscon "O-T" Steel Joists for lightweight, fire-resistant floor and roof support. Send coupon for design data and loading tables.

### THINKING "CURTAIN WALL"?




New Truscon booklet offers information to help architects, engineers and contractors make most efficient use of curtain-wall construction. It contains design data and detail drawings covering seven different Truscon Metal Curtain-Wall types. It shows how the Truscon system meets architectural and structural requirements without losing the benefits of efficient shop fabrication, with the designer maintaining full freedom of choice in adapting the proper wall to the structure. Send coupon for your copy.

**REPUBLIC STEEL CORPORATION**
**Dept. C-3051**
**3108 East 45th Street**
**Cleveland 27, Ohio**

I'm interested in more information on these building products made by Republic's Truscon Steel Division.

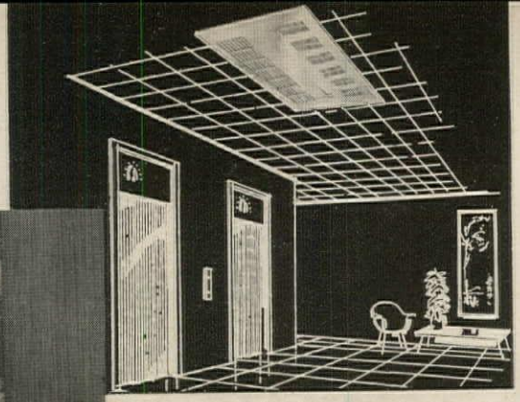
☐ Vision-Vent Window Walls ☐ Curtain-Wall Systems
☐ "O-T" Steel Joists

Name_____ Title_____

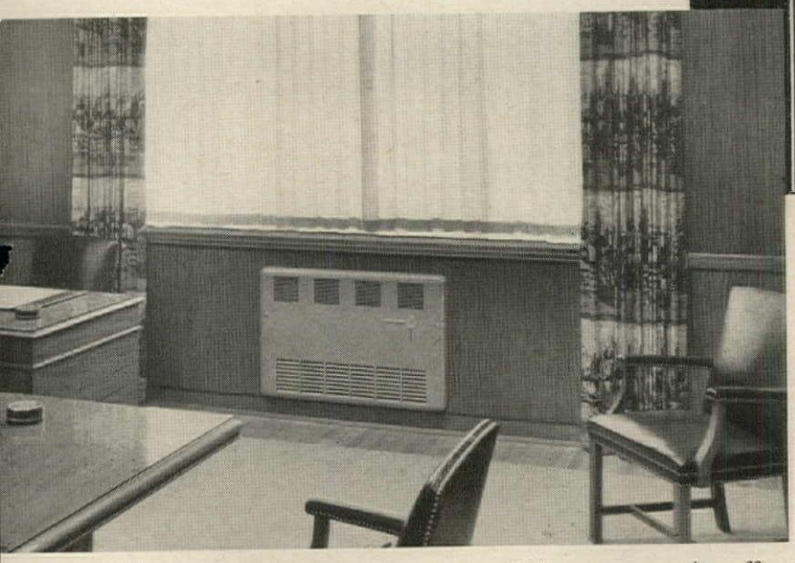
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*Space problem? Try a recessed ceiling installation.*

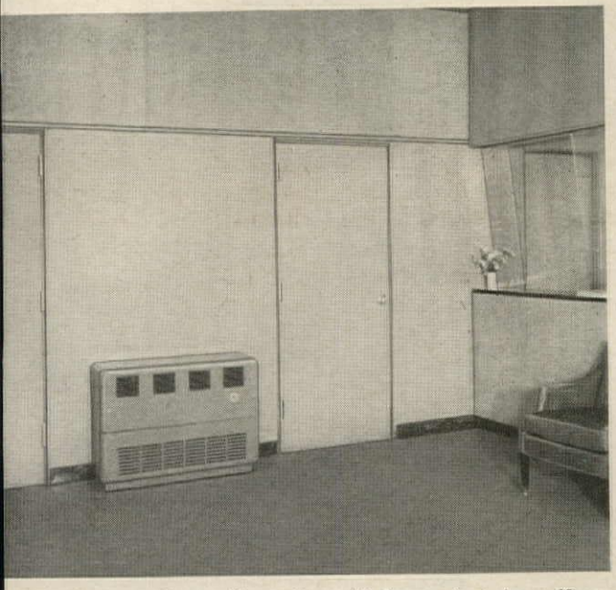


*Rich style accent plus heating efficiency—executive office.*

# *Versatile*

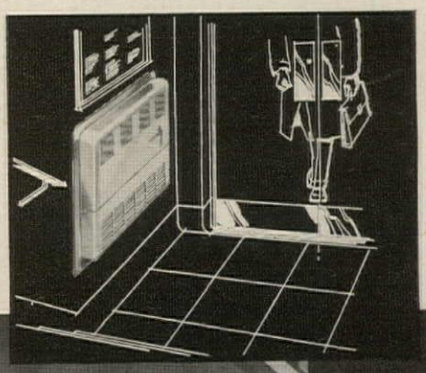
**is the word for**

# HERMAN NELSON....

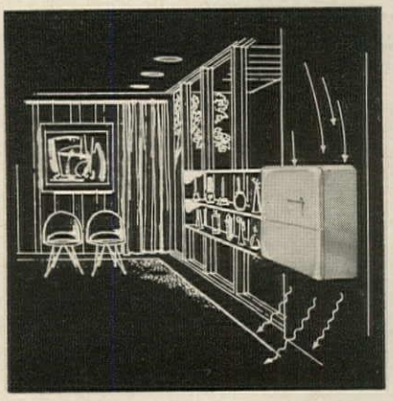


*Efficient, silent, beautiful—perfect for offices.*

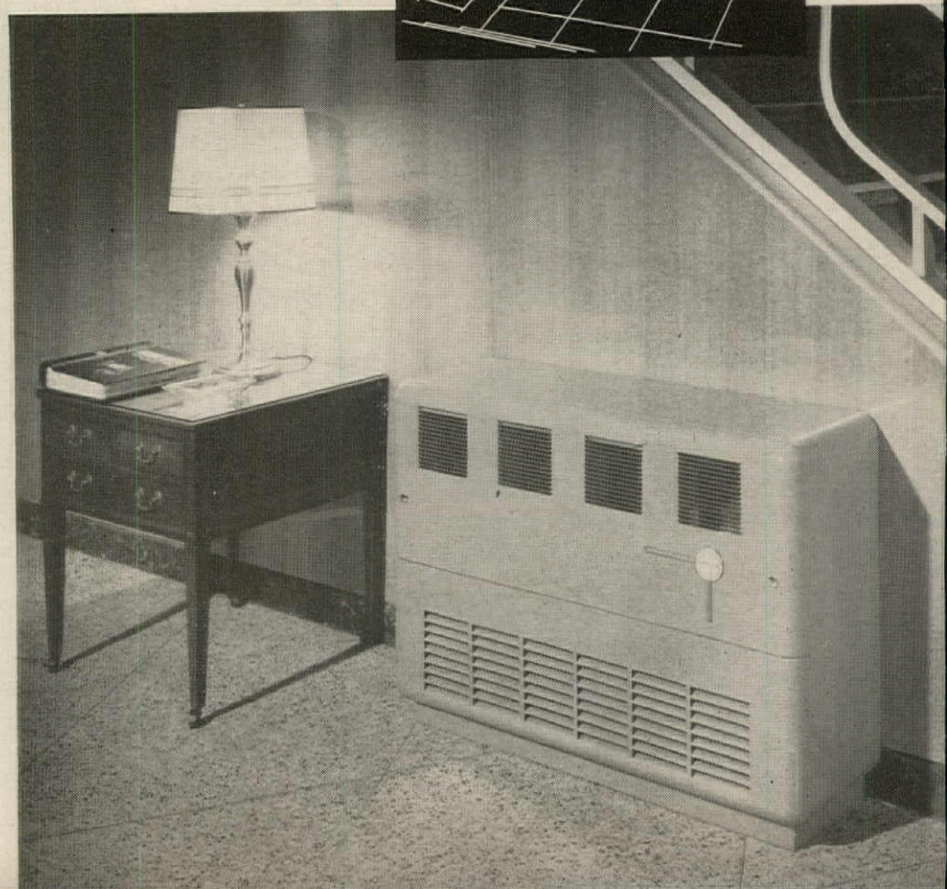
*Units can be either fully—or semi-recessed in the wall.*



*Stairway space utilized in office building.*

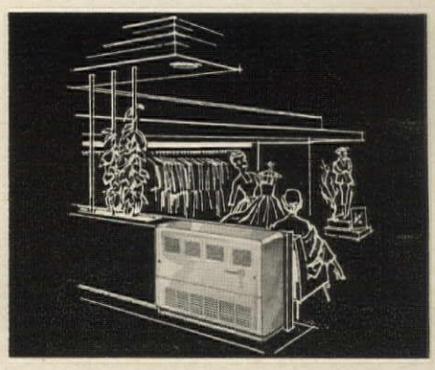


*Cold floors? Not with this inverted Console Heater installation.*





*Warm air* where *you want it—especially in churches and assembly rooms.*



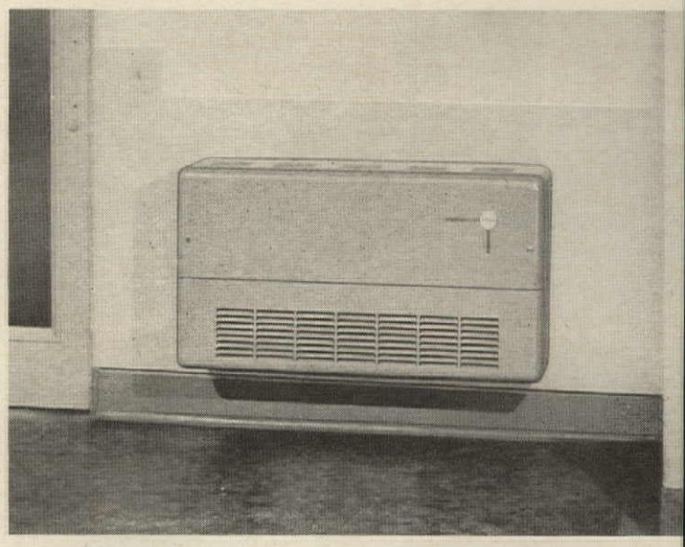
*Adds smart beauty as an attractive room divider.*

# ...CONSOLE HEATERS

## beauty, performance and variety of arrangements offered by no other cabinet style heater

Just look at a few of the smart new arrangements possible when you plan with the Herman Nelson Console Heater in mind. Place these attractive units free-standing, semi-recessed or fully recessed on the floor. Use them as room dividers. Hang them from the wall. Suspend them from the ceiling. There is no limit on your design ideas!

Here, in a compact, single source of heated air for both commercial and institutional applications, you offer graceful beauty combined with quiet, dependable performance. Proved efficient heating "package" consists of hot water or steam coils, fan assembly and filters. A choice of colors, too! Get ALL the facts now on the beautiful Herman Nelson Console Heater. Write for Bulletin 727A.



*Remodeled corridor—no room for recess, yet off floor*

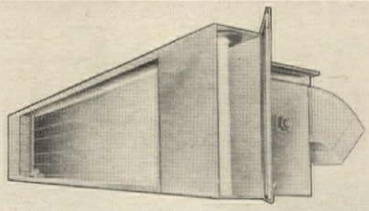
*Better Air is our Business*

AAF herman nelson

**American Air Filter**

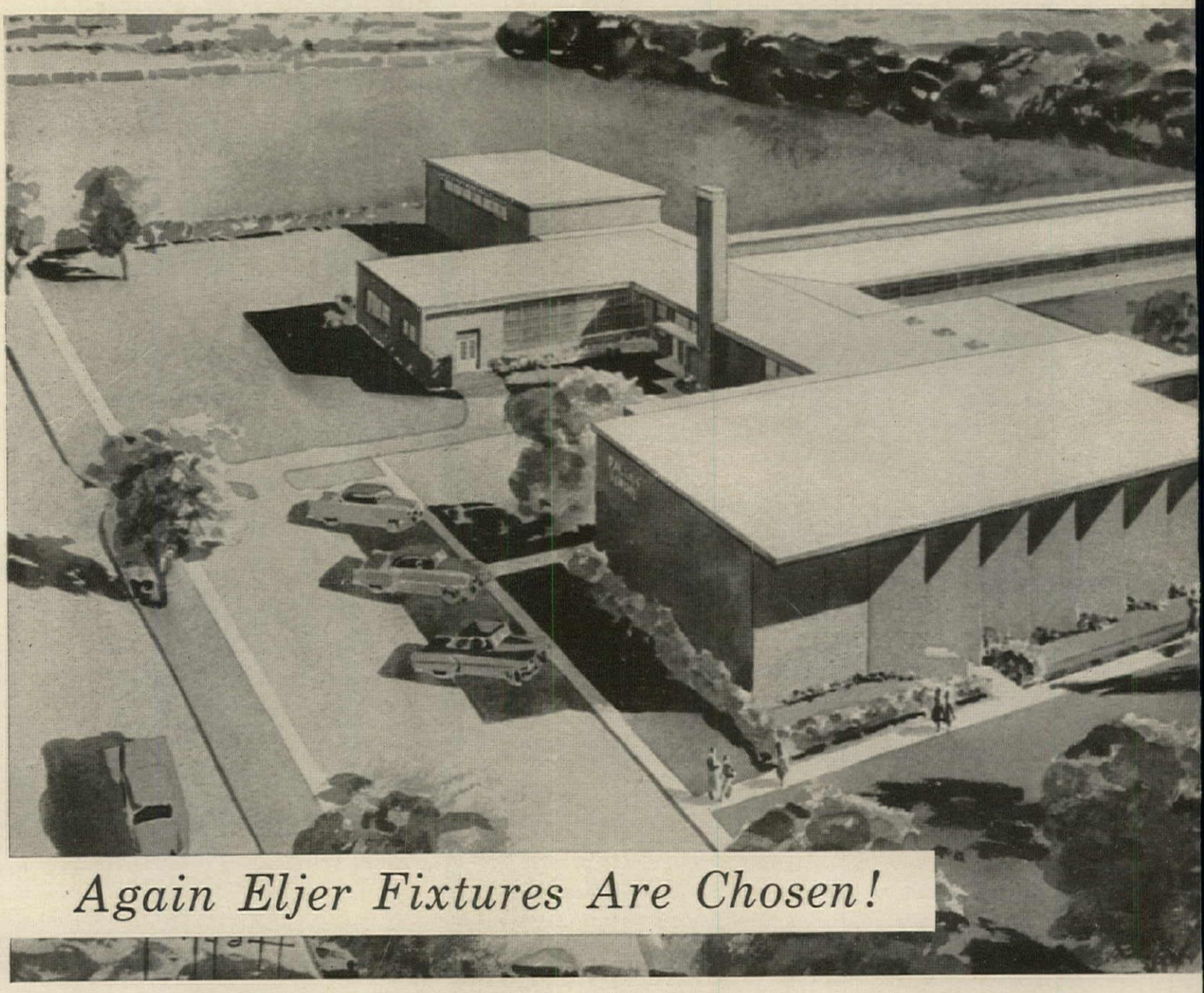
COMPANY, INC

LOUISVILLE 8, KY.



**ANOTHER ADVANCED-DESIGN PRODUCT FROM HERMAN NELSON**

Now . . . Roll-O-Vent air handling units that change their own filters *automatically!* They're new from Herman Nelson. A 65-ft. roll of filtering media loads like a camera, lasts up to a year, provides *constant*, high-level performance because clean media rolls into position *without attention*. Write for details. Ask for Bulletin 780A.



*Again Eljer Fixtures Are Chosen!*

# ELJER "passes all tests"

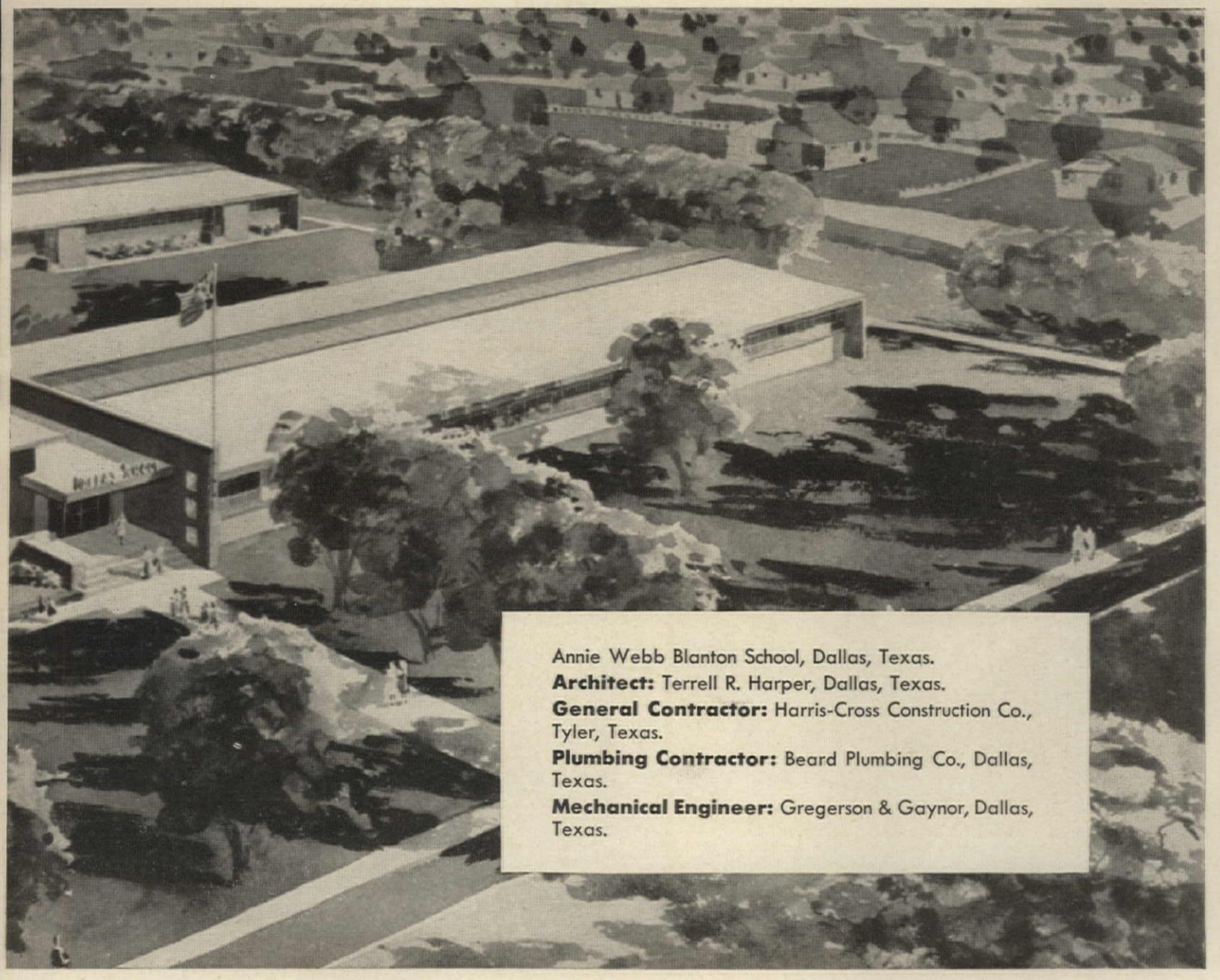
MURRAY




**Modern production methods** in all four vast Eljer plants speed delivery and protect the quality of Eljer fixtures.

**Craftsmanship,** exemplified in the age-old skill of the modeler, assures you that every Eljer fixture meets today's highest standards.





Annie Webb Blanton School, Dallas, Texas.
**Architect:** Terrell R. Harper, Dallas, Texas.
**General Contractor:** Harris-Cross Construction Co., Tyler, Texas.
**Plumbing Contractor:** Beard Plumbing Co., Dallas, Texas.
**Mechanical Engineer:** Gregerson & Gaynor, Dallas, Texas.

# for new Texas school

**Efficient sanitation** is a major factor in the selection of plumbing fixtures for today's schools. Equally important is rugged quality that will meet requirements for school installation.

We are proud that Eljer fixtures have been chosen for Dallas' handsome new Annie Webb Blanton School—and for so many other new buildings across the nation.

Eljer's unusually complete line—in vitreous china, formed steel and cast iron *plus* steel kitchens—can meet your most exacting requirements for either white or colored fixtures. Eljer brass fittings are completely renewable.

Our representatives will be glad to work with you on the plumbing fixture specifications for your projects. Please call on us at any time.

ELJER*

DIVISION OF THE MURRAY CORPORATION OF AMERICA
Three Gateway Center
Pittsburgh 22, Pa.

*ELJER – the only name you need to know in plumbing fixtures*

"For glare reduction, I'm specifying **american LUSTRAGRAY*** sheet glass"

"My tenants enjoy its soft, diffused light"



AMERICAN LUSTRAGRAY—the new, neutral gray tint, glare reducing glass—is being specified by progressive architects who are interested in modern glazing for modern buildings. LUSTRAGRAY has all the high quality features of other AMERICAN glass products, including minimum distortion. It is a very economical tinted glass, and eliminates the need for sunshades.

### Functional Features

- Reduces glare approximately 50%
- Reduces solar radiation transmission approximately 33⅓%
- Permits clear view
- True color transmission
- Neutral shade harmonizes with interior and exterior colors
- Enhances interior decoration by softening color contrasts
- Creates restful atmosphere
- Non-fading
- Does not require the special installation handling of other tinted glass

AMERICAN LUSTRAGRAY is now available through more than 500 glass jobbers. Check your classified telephone directory for listing.

american

*LUSTRAGRAY DATA

- Thicknesses: 7/32", 1/4"
- Maximum Size: 6' x 10'
- Slightly larger sizes on request when available

MODERN GLASS *Best at a Glance*

AMERICAN

american WINDOW Glass COMPANY
PITTSBURGH, PA.

PLANTS: ARNOLD, PA. • ELLWOOD CITY, PA. JEANNETTE, PA. • OKMULGEE, OKLA.

WSW 6341

*Left*—Wiley house, New Canaan, Conn. Philip C. Johnson, Architect. Photo by Ezra Stoller, N. Y.

*Right*—Storage area in a Chicago factory building, floored 90 years ago in Northern Hard Maple.



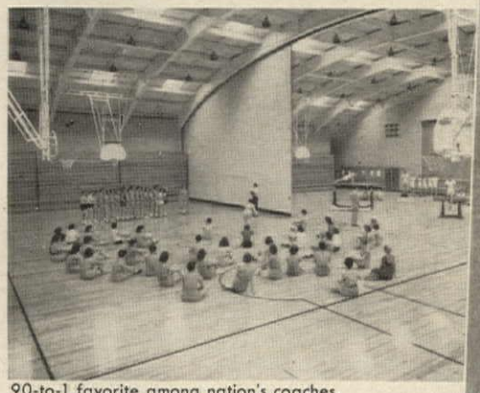
"Modern as tomorrow" for the home.



"Tougher than traffic" after 90 years!

*Left*—Multi-purpose gymnasium, Chambersburg, Pa., Senior High School, designed to serve six school districts. Lawrie and Green, Architects.

*Right*—Lounge room, Country Club, Raleigh, N. C., Maple-floored throughout. Architect, Wm. Henley Deitrick, Inc.



90-to-1 favorite among nation's coaches.



Best of floors for finest of clubs.

*Left*—Spinning Room, Greenwood Textile Mills, Greenwood, S. C., Floor, Northern Hard Maple.

*Right*—Langendorf United Bakeries, Inc., Seattle, Wash. Ultra-modern throughout—and maple-floored, naturally!



The "foot-friendly" factory floor.



"Sunshine-bright!" Clean! Comfortable!

# for sixty years, for nearly every use, for *every* good reason

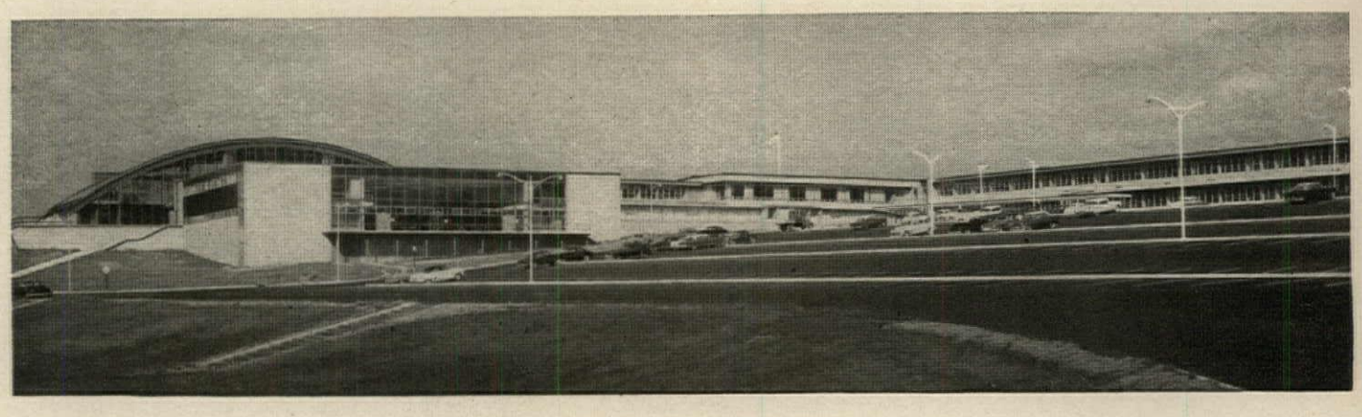
the finest floor that grows

**MAPLE FLOORING MANUFACTURERS ASSOCIATION**
Suite 564
Pure Oil Building
35 E. Wacker Drive
Chicago 1, Illinois

# NORTHERN HARD MAPLE

BEECH AND BIRCH

Today's public preference for cheerful brightness emphasizes anew the tough, enduring, ageless beauty of Northern Hard Maple floors. What other floor, natural or synthetic, serves so many varied needs so well and so long? In the six typical areas pictured, **MFMA** Maple, you'll agree, is an eminently sound specification. It will serve for years with routine maintenance. Easy refinishing will bring out the "new floor" that's always waiting underneath. Available in wide variety of block patterns as well as the familiar strip. See Sweet's (Arch. 13j-MA) for full facts.



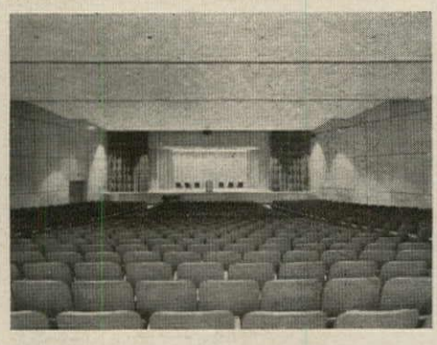
# Thermal comfort, convenience, economy in largest

**ABINGTON TOWNSHIP SENIOR HIGH SCHOOL,** Abington, Pennsylvania . . . is noteworthy for its comprehensive educational program and its complete development of modern facilities for learning.

Architect:
**Joseph Wigmore, Philadelphia, Pa.**
Mechanical Engineer:
**Carl D. Shields**
General Contractor:
**Baton Construction Corporation**
Mechanical Contractor:
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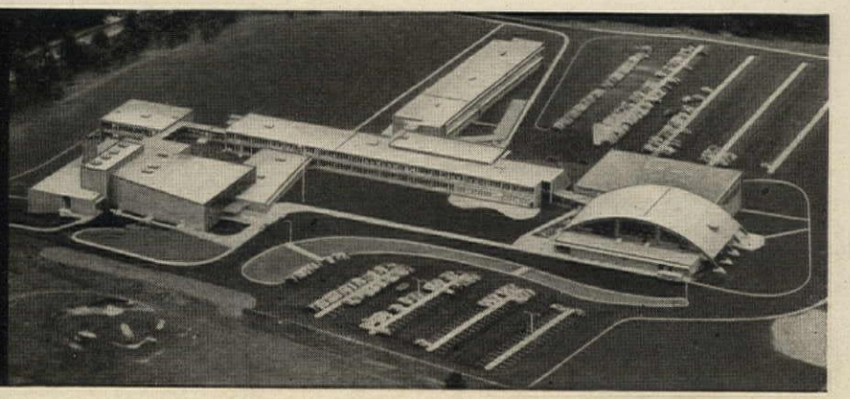








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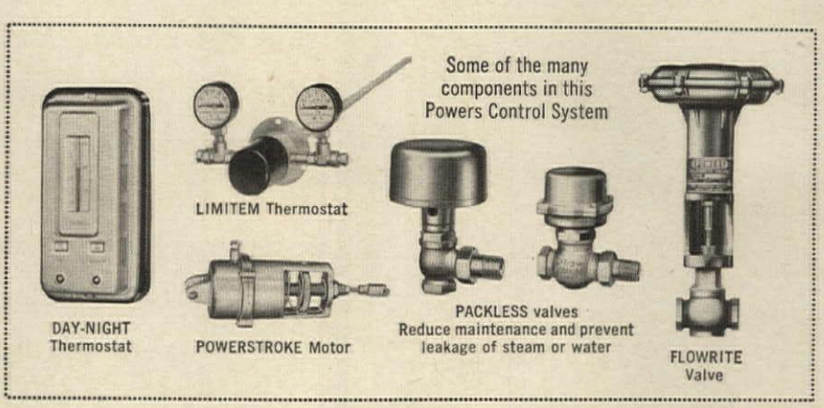
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*For further information contact our nearest office*

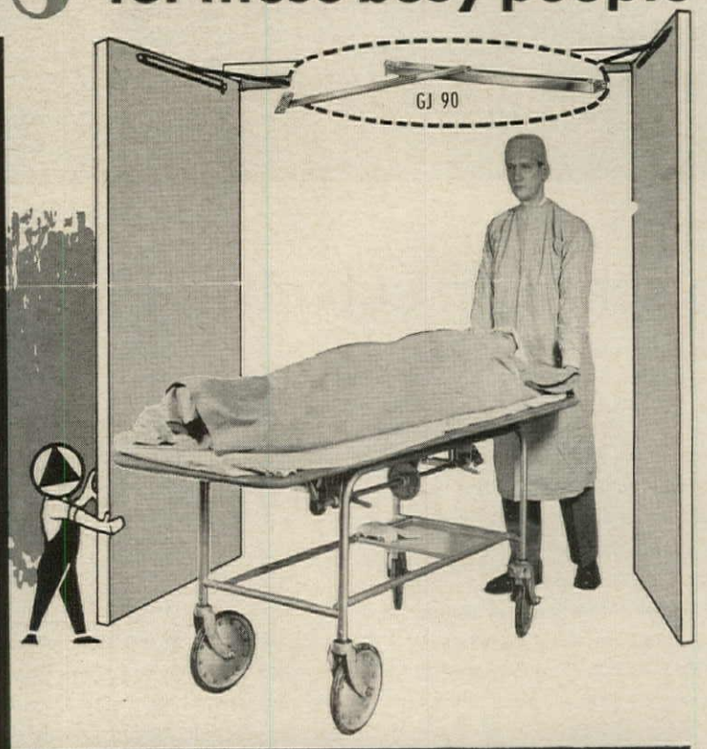
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# Excerpts

## What other people are saying

### Profane modern architecture

*Last fall W. H. Auden was appointed Professor of Poetry at Oxford. At that time he found these unkind words for nonceremonial architecture*

Great changes in artistic style always reflect some alteration in the frontier between the sacred and profane in the imagination of a society. Thus, a 17th century monarch had the same function as that of a modern state official—he had to govern. But in designing his palace, the Baroque architect did not aim, as a modern architect aims when designing a governmental building, at making an office in which the king could govern as easily and efficiently as possible; he was trying to make a home fit for God's earthly representative to inhabit; insofar as he thought at all about what the king would do in it as a ruler, he thought of his ceremonial, not his practical actions.

Even today few people find a functionally furnished living room beautiful, because, to most of us, a sitting room is not merely a place to sit in; it is also a shrine for father's chair.

### Where are we going?

*The Economic Club of Detroit recently brought Architects Eero Saarinen and Victor Gruen together to discuss where modern architecture is taking us*

**Eero Saarinen:** You may have been given the impression that now that the battle between the eclectic styles has been won and modern architecture holds the field, that this architecture of today is "the thing" and will stay just that way except for minor fashion changes. And indeed many an architect believes just this. However, some—perhaps a little more thoughtful and talented—believe otherwise. The bleak box made out of glass and cardboard-like masonry is not here to stay.

It is my guess that fairly soon the prefabricated house will take over the house builder's job. We have heard about the prefab house for a long time—just as we have heard about the helicopter for a long time, and one begins to wonder whether it will ever bloom out to an important thing. The helicopter is finally succeeding—and it is my guess that within the next 30 years the prefab house will also. The aluminum and plastic house will offer much more than the house of today. Air conditioned, with ice water in bathrooms, push button windows, and so forth, it will succeed because it will be the housewife's dream.

My second prediction concerns the size and scope of architectural projects. It is my belief that architecture in the future will be much more concerned with the large project, consisting of many buildings and less and less with the single building. Whether these are housing projects, shopping centers, medical centers, research centers or universities, just as the parts from which buildings are assembled, will increase in scale so also will the total enterprise. I look forward to this. This gives us opportunities to create whole harmonious environments. The space between the buildings can be planned with gardens, pools and fountains. This will also be the major way in which our cities will be put back in order. They are at their ugliest right now.

I predict that buildings of the future will look quite different from the run-of-the-mill modern of today. There will always be run-of-the-mill stuff, but that follows pretty closely the buildings that set the pace—only about one issue of the ARCHITECTURAL FORUM later. No, I predict that we will develop a rich metallic look to our most urban buildings. We will have more sparkle and decoration to our façades.

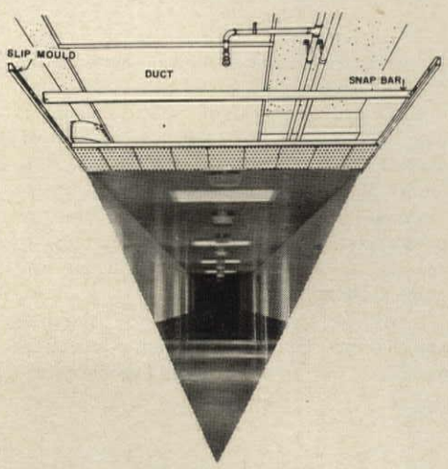
And last—and perhaps a little further in the future—I can visualize that centers of cities and shopping centers, fair grounds and other pedestrian areas, will be covered by great transluscent plastic domes. Within these we will control our climate. I can visualize these domes spanning one-half mile. Atomic power will furnish the energy for heating and cooling these space structures at an infinitesimal cost.

**Victor Gruen:** It was pioneering architects who grasped first the potentials of the new industrial age. They freed the structures from the clutter of factory-produced imitations of expressions of handcrafts. It was they who showed how to use the materials and products of the machine age proudly and with self-confidence and who raised the flag with the battle cry "Form follows Function."

But technology, once unleashed, was not satisfied to produce with machines what formerly was made by craftsmen. It went far beyond Utopian dreams. It broke through the imagination barrier, forward towards new, formerly unimaginable events.

Thus, a great portion of cityscape and landscape was converted to *"auto-scape,"* made up of acres and acres of concrete roads, parking areas and all the other structures which it requires. The automobile has done some remarkable things

*continued on p. 222*


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Above: New Coney Island General Hospital in Brooklyn, N. Y. has some 226,000 sq. ft. of SIMPLEX ceilings, mostly corridor. Architects: Andrew J. Thomas & Katz, Waisman, Blumkrantz, Stein, Weber.

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to our cities. It has exploded them, as far as our residential areas are concerned, into a scatterization of suburbanism. It has transformed formerly desirable residential areas around city cores into blighted areas and slums. It has drawn business and industry away from the urban centers, and it is threatening to denude our downtown areas of their economic strength.

And architects stand on the sidelines and observe. They observe somewhat sadly how their own performances become meaningless in the hubbub, how the beauty of their structures, seen only through the wraparound windsheld or the rear view mirror of automobiles going 30 to 60 miles an hour remain unappreciated; and how these structures suffer under the general squalor—the disorderliness, the noise and the fumes of their surroundings.

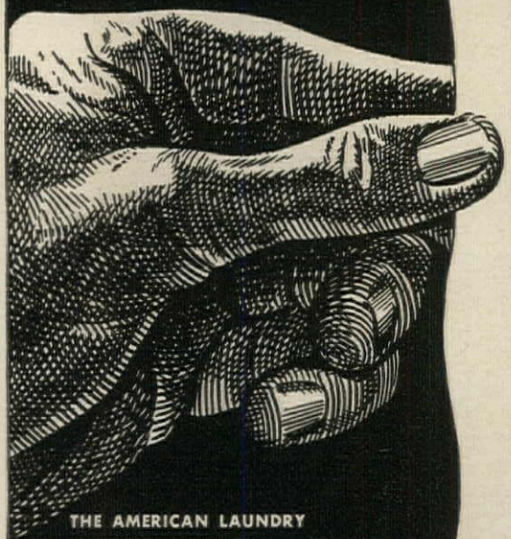
Architecture has left its most important challenges of today to others to take care of. It has left the building of the millions of new homes for the middle classes to the speculating viewpoint of the tract developer and the shaping of the man-made environment to the inhuman, mechanical approach of the traffic engineer.

Half a century ago, pioneers of modern architecture tore the false fronts from individual structures. The new challenge is to tear the false pattern left over from the horse and buggy days from our urban scene.

Architecture has to provide an order which gives both automobile and human their natural habitats: to the automobile, engineered, many-laned highways, rolling through broad, landscaped areas; and to men, a truly humane environment in which, put back on their own two feet, they can, in safety, peace, and beauty, go about their tasks, observing and enjoying the interplay of arts, architecture and landscaping.

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## Housing not hospitals

*"Don't make springboards or asylums out of public housing," says Elizabeth Wood, consultant to the Citizens' Housing & Planning Council. Miss Wood, long a leader in US public housing, spoke at the annual meeting of the National Association of Housing & Redevelopment Officials*

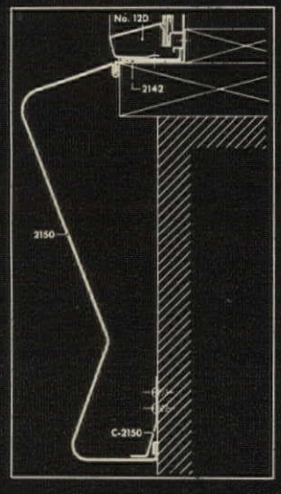
I have always believed that public housing is a social welfare instrumentality, though we have not cared to talk about this since the early days, and it hasn't been so recognized by the professional social workers, either—in this era of psychiatry. But I wish to point out—unequivocally—that it is un-American, antisocial, uneconomic and generally awful to regard public housing as hospitals, and our problem families as patients.

We need help from the social agencies to work with these problem families, but we also need the help that only good neighbors in good neighborhoods can give. So long as public housing is the *temporary* home of the capable, the honest, the ambitious—but is the *permanent* home for the damaged, the non-normal, the deceitful —public housing will not produce good neighborhoods. Public housers today face three choices. They can turn the projects into hospitals, or they can really act like the real estate operators they think they are, or they can seek to modify the public housing program.

If you do not accept either of the first two choices, you have the third—one appropriate to a public servant, the servant of all the people. But you will have to bring about some very *important* changes in the shape of public housing. Technically you will have to set the public housing free. You will have to conceive of public housing as a community where people can live as they can live anywhere—where they can put down roots, where leadership is wanted and rewarded.

*continued on p. 224*

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## Planning and civil rights

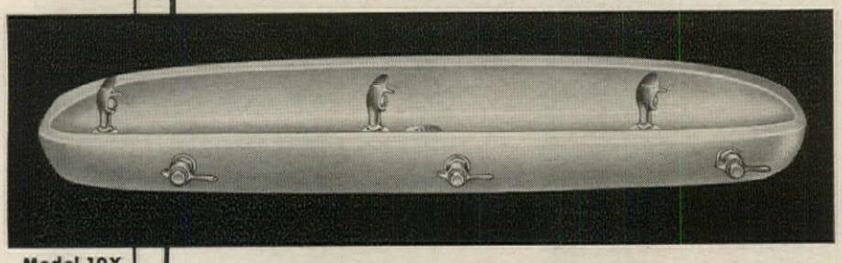
*What is to protect us from unplanned zoning? The question is raised by Henry Fagin, planning director of the New York Regional Plan Association, speaking before the Annual Conference of the New Jersey State League of Municipalities*

The ultimate test of a zoning ordinance has been its relation to a comprehensive plan. In the name of this plan, the police power has given to one owner and taken from another. The simplicity of pattern of a map of zoning districts has been the guardian of the people against favoritism, against abuse. But if we are to proceed by an endless series of separate administrative actions, what then becomes the guarantee of equality before the law?

When the New Jersey planning enabling statues were revised in 1953, a novel and valuable principle was enacted. The powers which the planning board might exercise in a given municipality were made dependent on the degree of progress on the municipality's master plan. Under this requirement, a planning board might question school site locations proposed by the school board only if the planning board already had prepared and duly adopted a set of master plan proposals for school sites. Similarly, the planning board might require the construction of certain through-roads in a new land subdivision only if these already had been shown on an adopted master plan. Following the same principle, the federal government now requires tangible evidence of what it calls a "workable plan" before it makes a grant under the urban renewal program.

Has the time perhaps come for our courts to demand tangible evidence of comprehensive planning when municipalities practice zoning through administrative action?

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## Too many masterpieces

*A plea for modesty is heard from Jose Luis Sert, Dean of the Graduate School of Design at Harvard University. Dean Sert spoke before the Southeastern Conference of the Association of Collegiate Schools of Architecture at the N.C. State College School of Design. His speech was first printed in the school's student publication*

You cannot ignore environment. I think many of the horrors we see around us today are due to the ignorance of or the total overlooking of the surroundings of a building. We have a tendency to design indoors. We have great ambition to make a masterpiece out of every little building. And a series of little masterpieces make a horror when you add them up along the street side. That is what happens when you see the little hot dog stands along the roadside. The architects wanted to do something marvelous in engineering and marvelous in design, striking in color, and all. Add them up and see what you get.

Architects have, of course, to deal with very important buildings, but often we are condemned for most of our life to deal with very insignificant buildings. I think we should be aware of the significance of insignificant buildings when they come to form part of our physical environment. I think there should be exercises in modesty in the schools of architecture.

As architects, we have to design for entirely new needs—big railroad stations, exhibition halls, assemblies, big everything —but we also have to design for people who still walk on their feet; who still have the same visual angle that the Egyptians had 2000 B.C., who still have the same optical and auditive system and the same human mechanism of man of the very earliest times.



(PHOTO BY ED T. SIMONS, WINSTON-SALEM, N. C.)

## At $7.23 per sq. ft. . . . this school knows its Arithmetic its Construction—and its Lighting!

Young eyes need good lighting, the taxpayers deserve a "break" — these were the considerations governing the choice of exposed precast concrete construction and LITECONTROL fixtures at Southwest Consolidated High School, Forsyth County, North Carolina.

Not only are the concrete beams exposed in this very unusual new school but it also has a precast roof deck. Result: a very low cost of $7.23 per square foot *complete*, for 21 classrooms, all-electric kitchen, cafeteria and gymnasium.

Litecontrol standard #4648RS fixtures were used with special adapter parts — in classrooms as well as library. Mountings are on conduit which run in a metal sleeve through the beams. Each classroom has 3 - 42" square acrylic skylights with the lighting designed by the engineer to supplement the daylighting provided by skydomes and windows. Heavy steel brackets hold fixtures rigid.

This installation is unusual but so are many where Litecontrol is solving lighting problems. Think of Litecontrol for your next school, office, library, store or factory job.

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AREA SHOWN:
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ARCHITECTS & ENGINEERS:
Stinson, Arey, & Hall, Winston-Salem, North Carolina

ILLUMINATING ENGINEER:
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ELECTRICAL CONTRACTOR:
Salem Electric Company, Winston-Salem, North Carolina

FIXTURES:
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Daylight and fixtures together, readings taken on dark, rainy day, intensity approximately 600 foot-candles outdoors — classroom intensity, 44 foot-candles average with excellent distribution ranging from 39 to 47 foot-candles over entire desk area.

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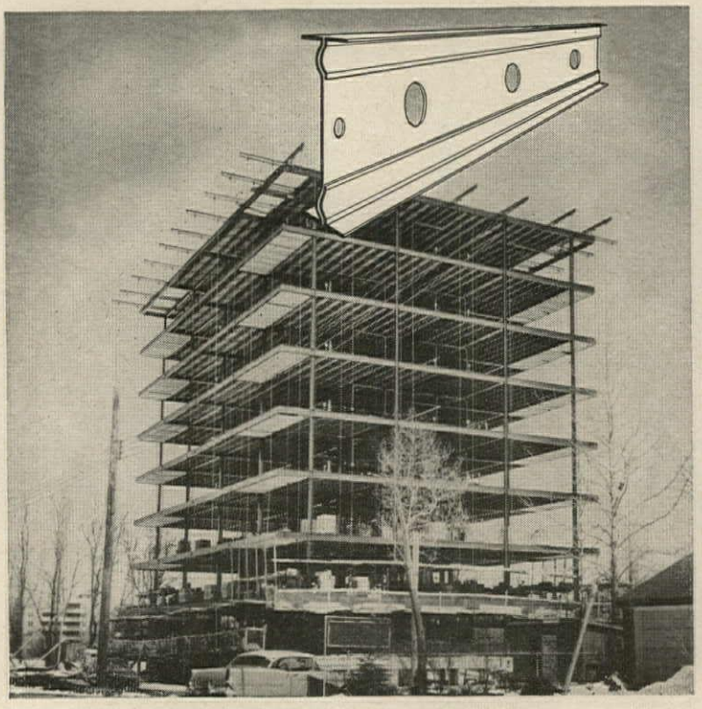
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VERSATILITY—Many structural variations are possible with this versatile system in the design of walls, roofs, partitions, canopies, floors, even entire buildings. A few are illustrated below.

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*Eight-story luxury-type apartment building, New York City. Builder: Alfred Levitt.*



*New Maximlite-designed Northeast Elementary School, Findlay, Ohio. Design by: John Auferoth.*

NAILABLE JOISTS AND STUDS—Stran-Steel joists are light gage steel members formed from strip steel and welded back to back to form the special nailing groove. They provide a non-combustible, economical and permanent framing system to which collateral materials can be quickly and easily applied. Available in 6″, 8″, 9″, 10″ and 12″ depths and in gages of 12, 13, 14 and 16. This range of depths and gages satisfies almost any load requirement.

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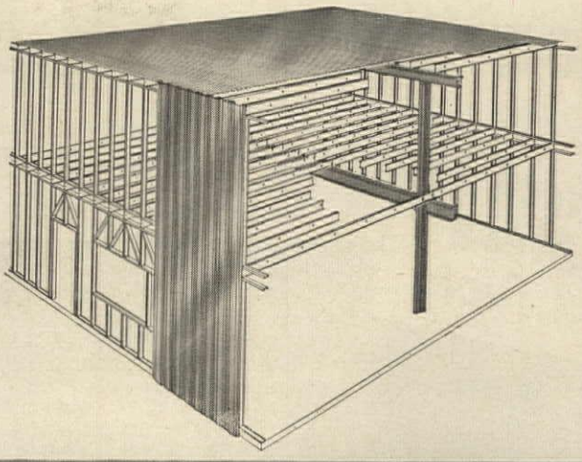
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# and curtain wall

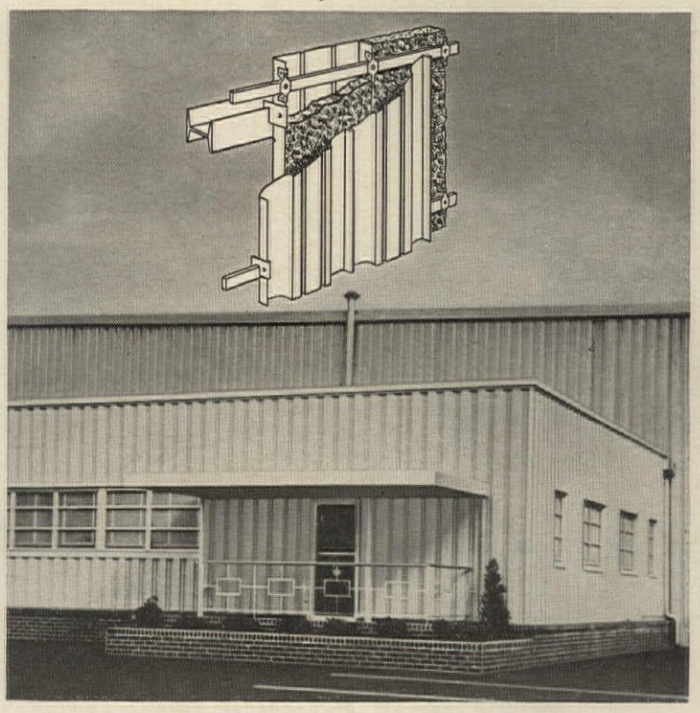


STRENGTH—Stran-Steel nailable joists, for example, have a yield point of 40,000 p.s.i., approximately 20% higher than that of most commercial mild steel. This extra-strength weight advantage prevails throughout the range of these products.

Stran-Steel products are ideal for schools, apartments, shopping centers and industrial plants.



*Cleveland's Parkland, $50,000,000 residential and shopping community. Project developer: Don Loftus. Architect: Wm. E. Harris.*



*Large, modern warehouse, Oakland, California. Owner: Bigge Drayage Co. Engineers: D. Y. Long Co.*

RIBBED ROOF DECK—Stran-Steel galvanized ribbed deck is designed primarily for use with Stran-Steel joists. However it is also useful as sidewall skin in certain applications. Two types are available:

1. Lightweight, nailable roof deck with ribs on 4″ centers. Available in 22, 24 and 26 gage, live load carrying capacities range from 32 to 206 p.s.f., depending on gage, with spans from 2′ to 4′.
2. Heavier roof deck for longer spans has ribs on 6″ centers. Available in 18, 20 and 22 gage. Live load carrying capacities range from 12 to 267 p.s.f., depending on gage, with spans from 3′ to 9′6″.

CURTAIN WALL—Stran-Steel curtain wall, made of exclusive *Stran-Satin* panels, combines a satin-smooth surface free of bright spangles along with the permanent protection of a non-corrosive zinc coating. It provides the low cost of steel with the eye appeal of far more expensive materials.

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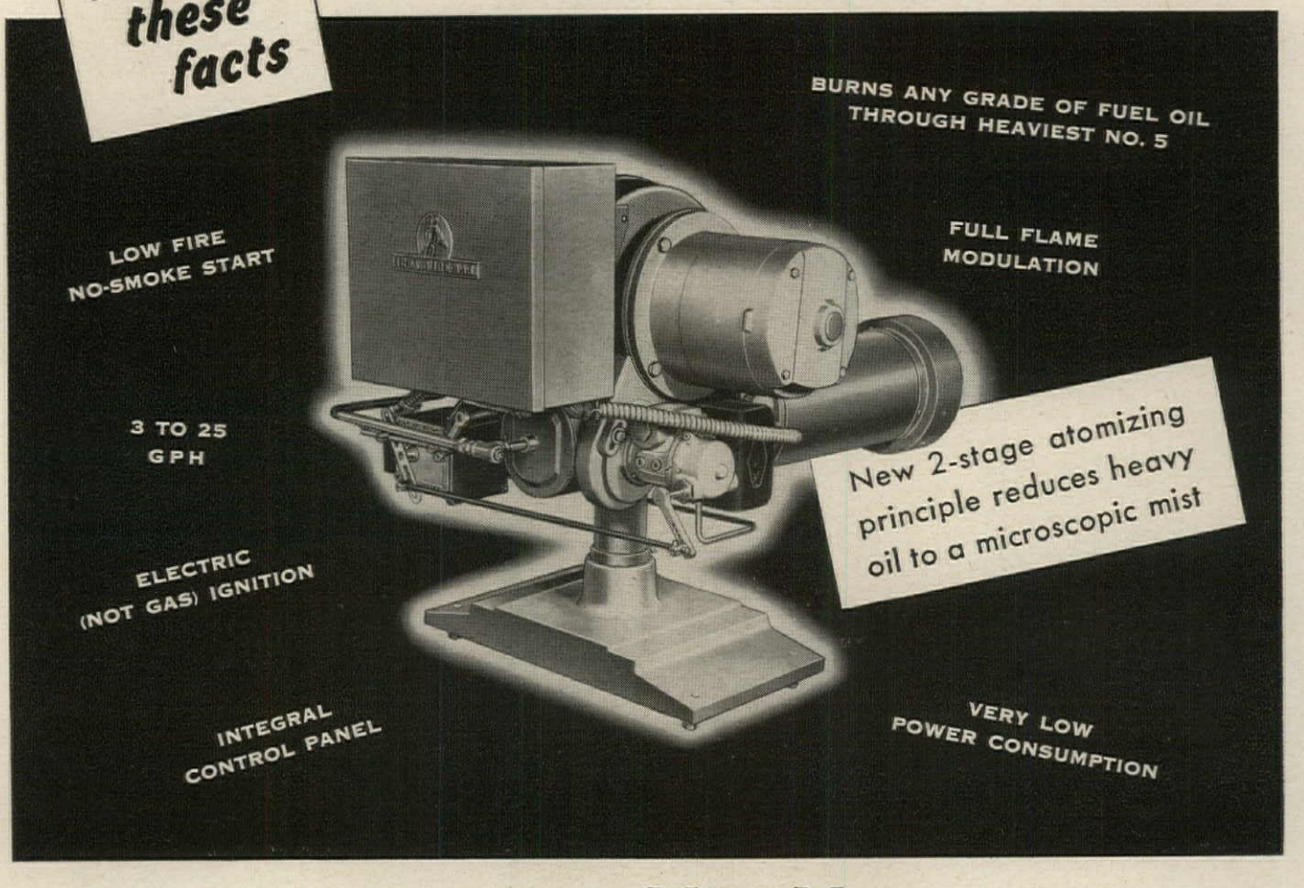
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***a reliable new method of firing low-cost heavy oils, including heavy No. 5***




## *Why is it called the MicroMist burner?*

The basic engineering advance used in the Iron Fireman MicroMist burner is a revolutionary new atomizing method. Heavy oils including *heavy* No. 5, are reduced to minute particles having the characteristics of a gas rather than a spray. The oil is so finely divided that it becomes an oil mist or fog that will remain in air suspension up to 24 hours or longer.

The heart of the Iron Fireman MicroMist burner is an ingenious supercharger, or compressor. The oil is mechanically atomized, as oil and air pass into the compressor. Such mechanical atomization is as far as other burners go. But in the revolutionary MircoMist burner, the compressor-atomizer further reduces the oil spray, by heat of compression, to a microscopic air-oil vapor.

This highly combustible vapor (which is easily ignited by an electric spark) is directed into the firebox by the nozzle. Unlike other oil burners, the nozzle is *not* a critical part, because it has nothing to do with atomization. There are no small passages subject to clogging. Heating of oil is required only for the heavier grades of No. 5, and then only for starting or pumping. The power load is exceptionally low. Extremely precise modulation is achieved through a variable volume pump.

### Look at these additional features

The Iron Fireman MicroMist burner is as easily installed as a conventional gun type burner. It has two important uses: as a conversion burner or as a component part of a packaged boiler-burner unit. No special boiler front or boiler pitting is required. The choice of oil grades is almost unlimited. Integral control panel is wired and tested at the factory. Fuel and maintenance costs are low. It fires low-cost heavy oils with little more attention than a domestic oil burner. Available for low fire start, high-low or modulating firing.

**IRON FIREMAN®**

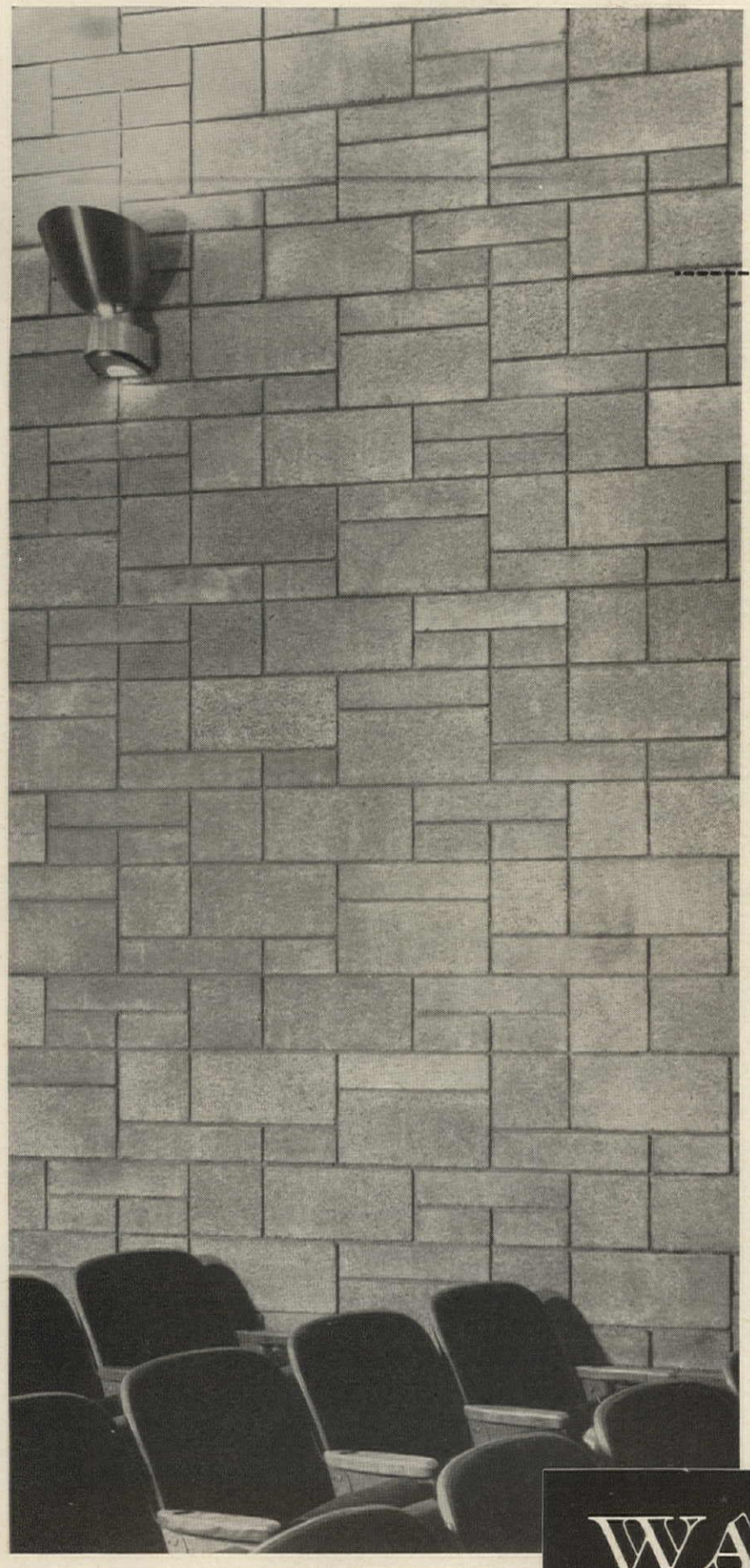
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Secondary School, East Windsor, Conn., Olson & Miller, Architects

**WAYLITE**

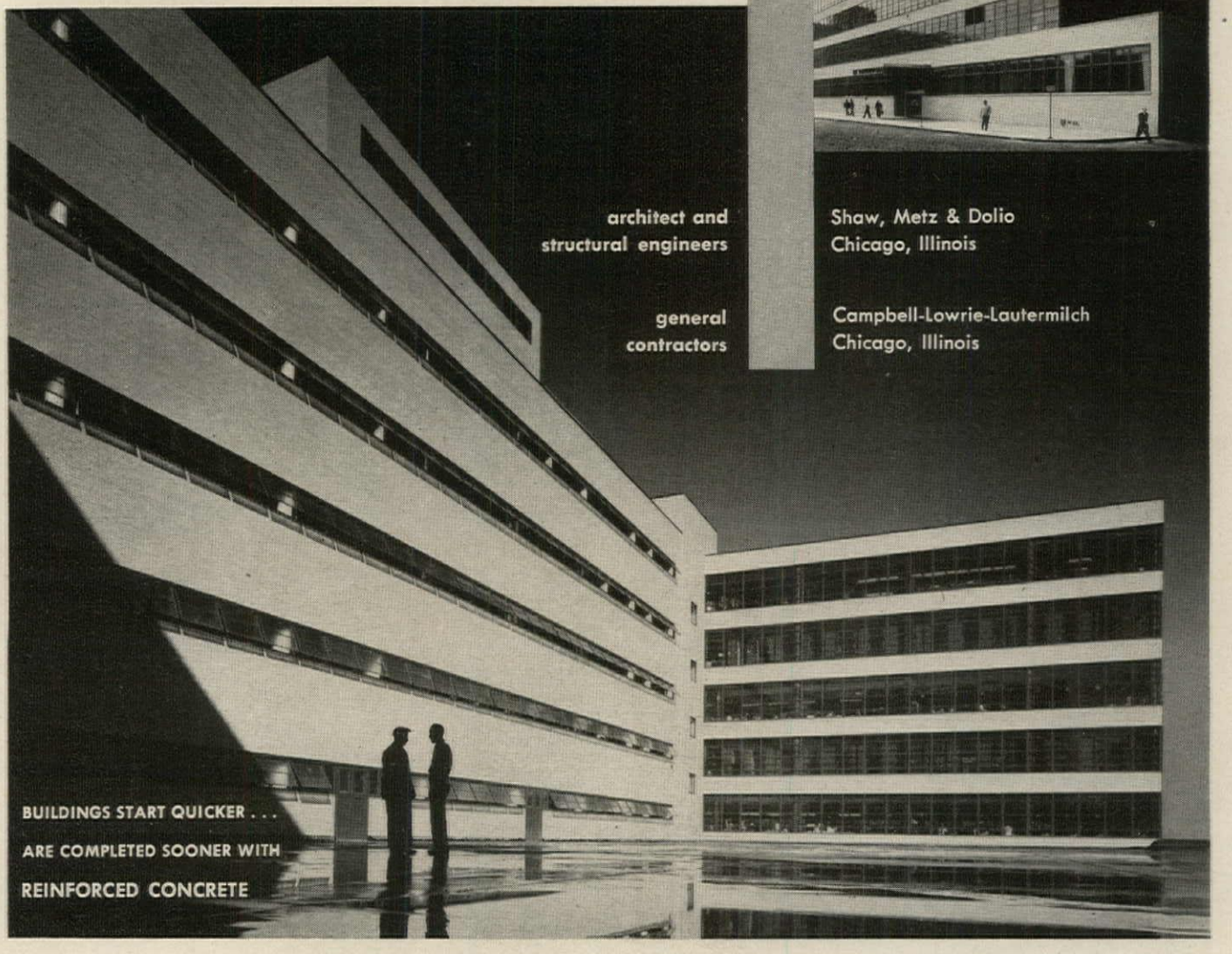
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**Florsheim Shoe Company factory**
**and headquarters in Chicago**




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**CASE REPORT NO. 1*** **JOANNA VINYL WALL FABRIC**



Texas National Bank Building,
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Kenneth Franzheim, Houston, Architect;
Manhattan Construction Company,
Houston, General Contractor;
B. B. Bettell and Son, Inc.,
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# Joanna Vinyl Wall Fabric

## *in the Texas National Bank Building Houston, Texas*

"We have paid out the original cost of our Joanna installation in paint savings alone." *Fletcher B. Emerson, General Manager and Executive Vice-President, Texas National Bank Building Corporation*

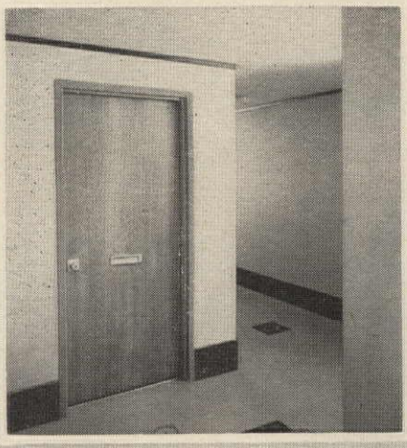
"Without question, Joanna Wall Fabric will take 300% more cleaning abuse than ordinary wall treatments." *A. T. King, Assistant Building Manager, Texas National Bank Building*

"We recommend a Joanna installation wherever possible." *H. B. Bettell, President, B. B. Bettell & Son, Inc. Painting Contractors for the Texas National Bank Building.*

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Photos show
Joanna Vinyl Wall Fabric
in corridors in the
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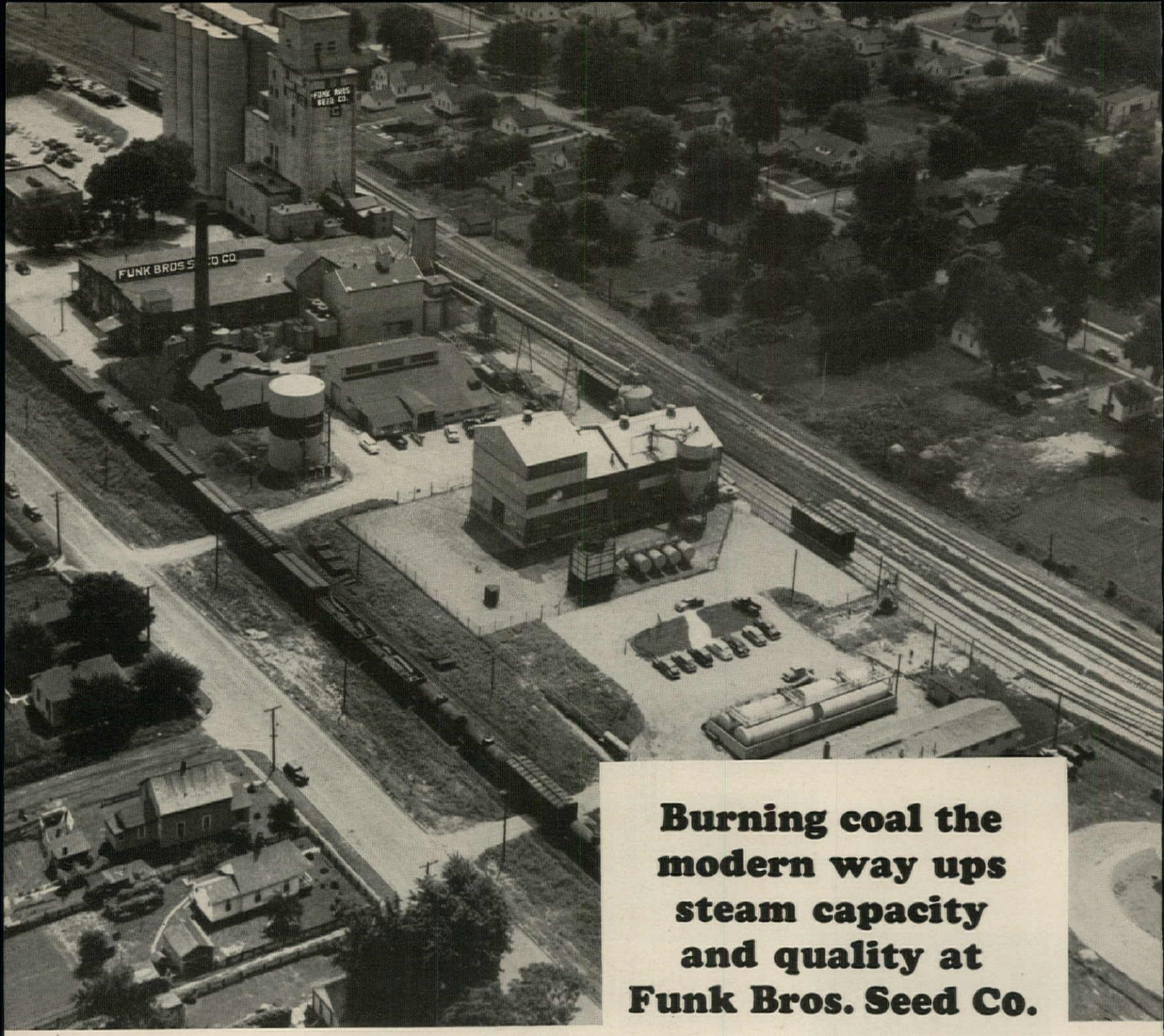
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MT-2

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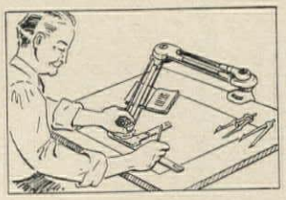



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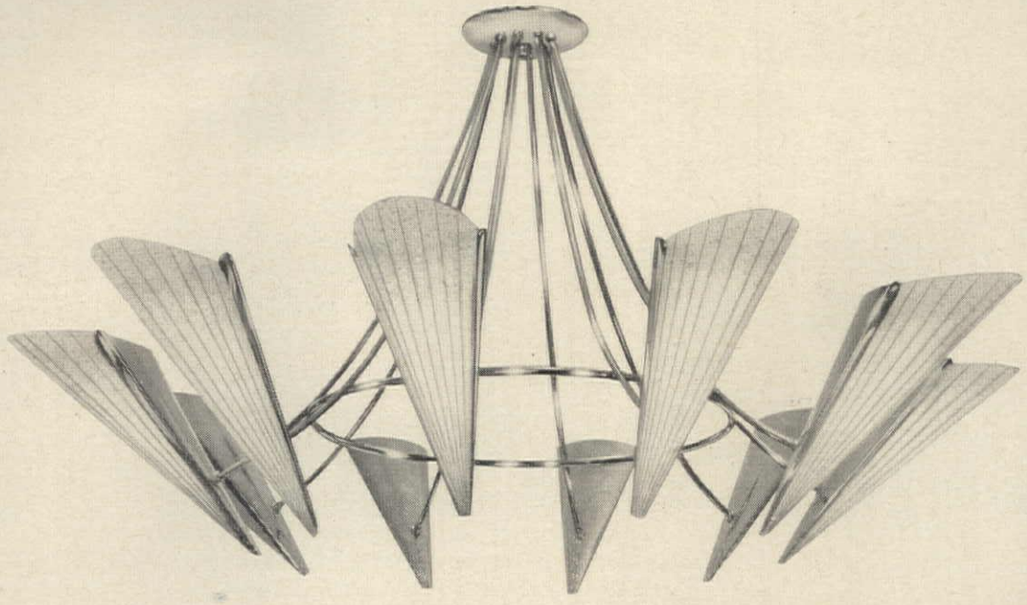


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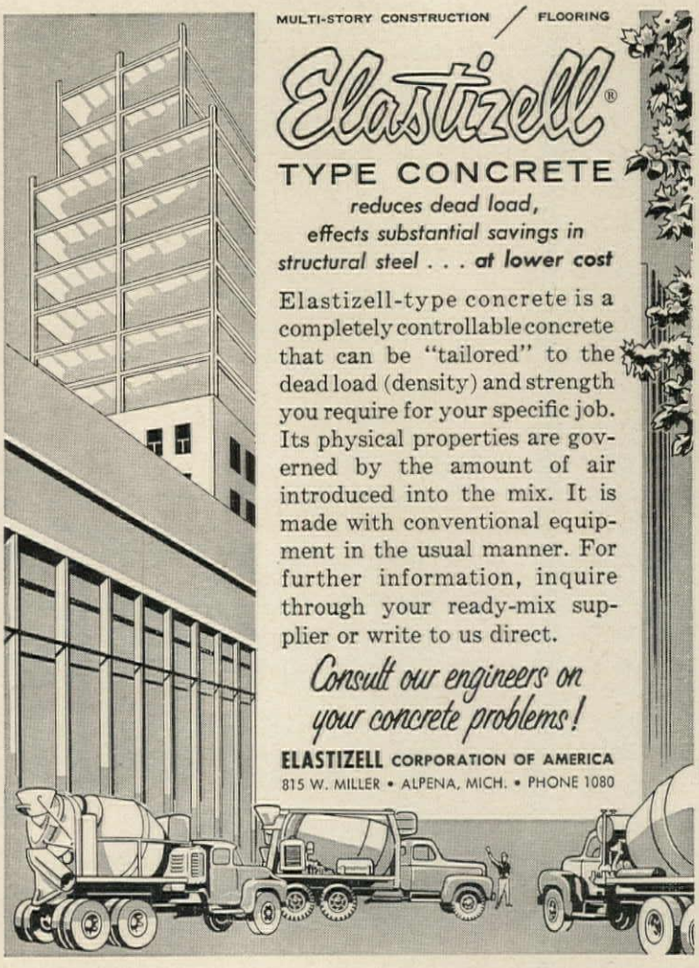
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*Architect:* C. L. Monnot, Oklahoma City, Okla.

Installed by Bissell Builders Supply Co., Oklahoma City

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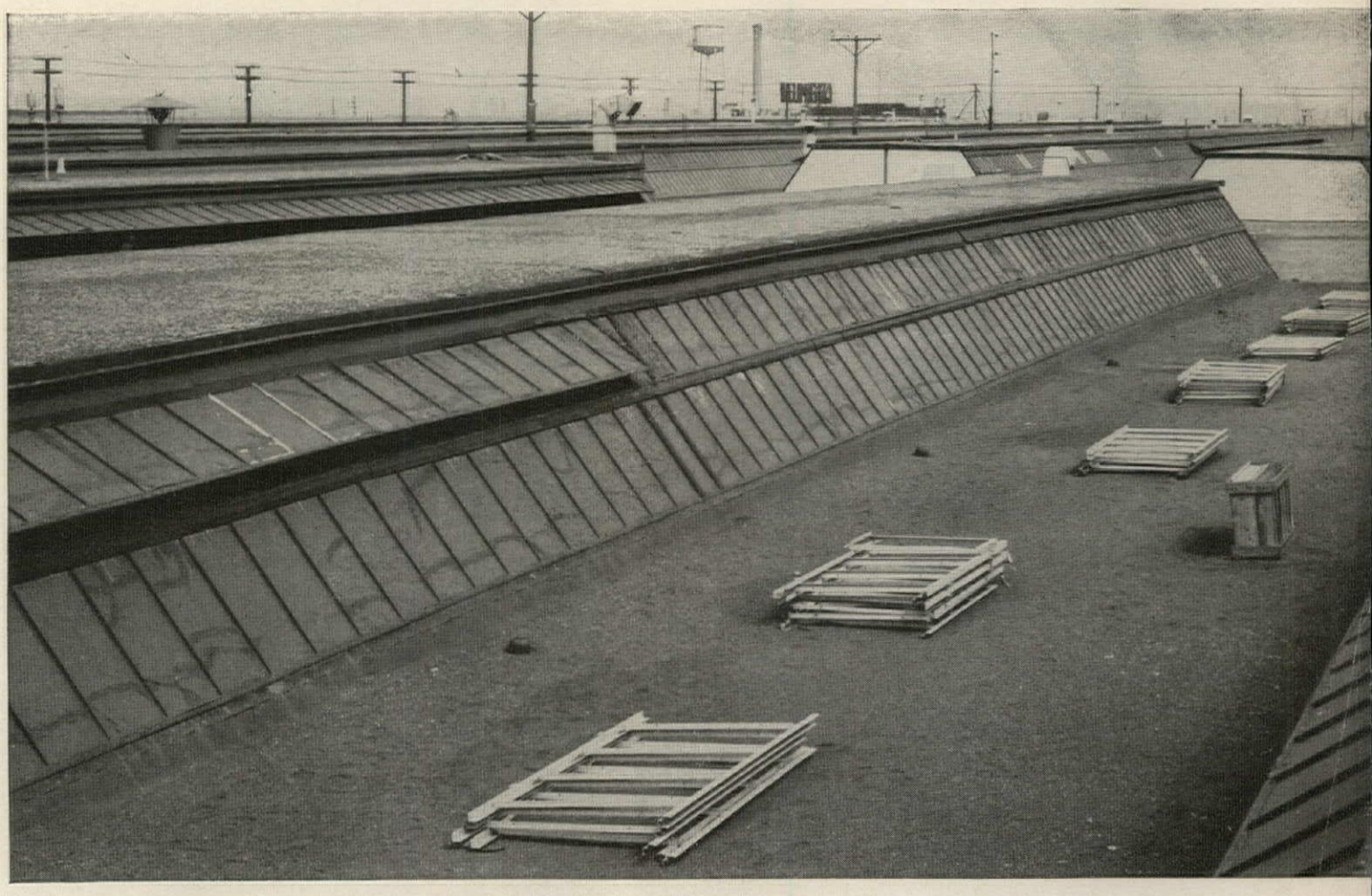
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Fenestra Industrial Steel Windows that need no painting, ready to be installed replacing the old monitor sash on Caterpillar Tractor Co., Building HH, Peoria, Illinois



Shown here are A. F. Wiedeman, Caterpillar Construction Engineer, and C. Y. Chapman, Construction Superintendent, examining the Fenestra Bend Bar Test that demonstrates the stronger bond of the Fenestra finish. Mr. Chapman, holding the Fenestra test bar, calls it "one of the best jobs I've ever seen." Your Fenestra representative can show you this same test. Ask to see it today.

**The Fenestra FENLITE Finish is also available on the complete line of Fenestra Intermediate Windows for schools, office buildings and other fine structures.**



Caterpillar Tractor Co.,
Peoria, Illinois, chooses Fenestra
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stable since 1947, both in prices and in location. A comparison of land assessments in 20 different blocks in the district shows almost no change in ten years, and the range of values—from a high of $13,000 a front ft. to a low of $550—is still at a level well below that of the 1930 market ($17,250 to $2,000). Outside the core area, steep increases in the Grand River–Southfield area and along James Couzens Road (where land around the Northland shopping center has climbed from $1,000 an acre six years ago to $15,000) have been matched by drops in the University of Detroit section and along both sides of Grand River Ave. between Joy Rd. and Grand Blvd. Like Detroit, Kansas City, Mo., has had little or no price increase in its central business district since 1947, while in Columbus, Ohio, where the 100% business district has tended to shrink rather than shift, prices in current dollars have edged up 10 to 15% at the center, but are about the same in the secondary part of the district. At the top of the scale, prices match, or come within 10% of matching, the peaks of the twenties when 99-year leases were being written at rents that capitalized out to $20,000 a front ft.

The farther West one goes, the more signs of boom appear in the cities. But even here, in the younger centers where growth has been strong and land use rapidly changing, the boom has seldom applied the broad-brush strokes it has in the suburbs. Dallas, for instance, has had spectacular jumps in land prices in the areas where its new skyscrapers have gone up, and values today in the business district, which has been moving east and northeast, are 33 to 50% above 1947. Parcels around the new Republic Bank building are today worth $5,000 a front ft., five times what they were ten years ago, while sites near the new Southland Life Insurance Co. center are appraised at $2,000 a front ft., compared with $500 in 1947. Against this, though, there is the Courthouse area—a collection of wholesale houses, cheaper stores and taverns in the west and southwest part of the district—where prices are unchanged.

Los Angeles appears to have no major areas at all where prices have not risen since 1947. But within certain areas, there are declines. In the heart of the downtown shopping district, for instance, land at Seventh St. and Broadway, assessed at $1.5 million in 1946, is now figured at $950,000; a few buildings away, valuation has dropped from $800,000 to $440,000. The shift of office buildings to the west of the district, however, has brought steady increases in the once residential land along Wilshire Blvd. One 53′ parcel, sold in 1946 for $12,500, was sold again in 1953 for $53,000. Asking prices now generally range between $1,000 and $2,000 a front ft. (The most expensive land ever sold in Los Angeles, however, is still the corner of Seventh and Hill Sts., which changed hands in 1928 at $27,000 a front ft.)

Much the same thing has happened in Denver. Growth and inflation have prevented any areawide declines, while in downtown the influence of new buildings in the section near Broadway has worked to boost values. Webb & Knapp, Inc., which in the early postwar years paid the city $7.68 a sq. ft. for some of the land for its Courthouse Square project, later paid $12, $14, $24 and $28 for other parcels. In the last few months, a local savings and loan association parted with $46 a sq. ft. for a site near the project where it wants to build.

#### The reasons why

Given all this, what explains it? Why amid prosperity and tremendous urban growth has this land boom had such a limited impact on the old central cities?

No matter where they are, cities are the result of the piling up of people's activities. When these activities are curtailed, or the nature of them downgraded, the physical plant of the city must adjust and downgrade, too. This, essentially, is what has been happening in many of the older cities in the last decade, and though there are several factors to explain it, none is more significant than the automobile itself. Because of the automobile and its poor handling, the age-old structure of the city has become badly ensnarled; because of it, people and business have been able to escape the congestion, at least temporarily, by retreating to the suburbs, and this shift has now become one of the greatest decentralization movements ever seen.

Despite time-honored belief, there is no such thing as an automatic relationship between population growth and land prices. (Homer Hoyt, in his Chicago study, found that there were four periods when there was a marked increase in population without any spectacular rise in land values.) Nevertheless, it is true that whenever major land booms have occurred in the city, a sudden spurt of population growth has preceded them and seems to have supplied the initial triggering action. Whatever its precise effect may be, the fact is that there has been no such impulse within the old central cities since the war, and this probably goes far toward explaining why the boom reaction never developed.

Between 1950 and 1956, while the population of suburbia went up 30%, central city population gained only 5%. Equally important, what city gain there was drew heavily from lower-income minority groups (which exerted little upward pressure on the level of rents and services). In Detroit, for example, total population climbed 14% between 1940 and 1950; in the same span, the nonwhite population went up 100%. New York, which was 12.7% Negro and Puerto Rican in 1950, is

*continued on p. 248*



SHEET METAL WORK:

a. Sheet metal duct work. Contractor shall provide all heat, vent and exhaust ductwork, registers, grilles, diffusers, screens, exhausters, ventilators, etc., shown on drawings or as may be required. All supply and exhaust sheet metal ducts shall be constructed of "WEIRKOTE" zinc-coated steel, and not less than 26 gage . . .

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changing character so rapidly that by 1970 demographers expect the city as a whole to be 28% Negro and Puerto Rican, with Manhattan alone running 45%.

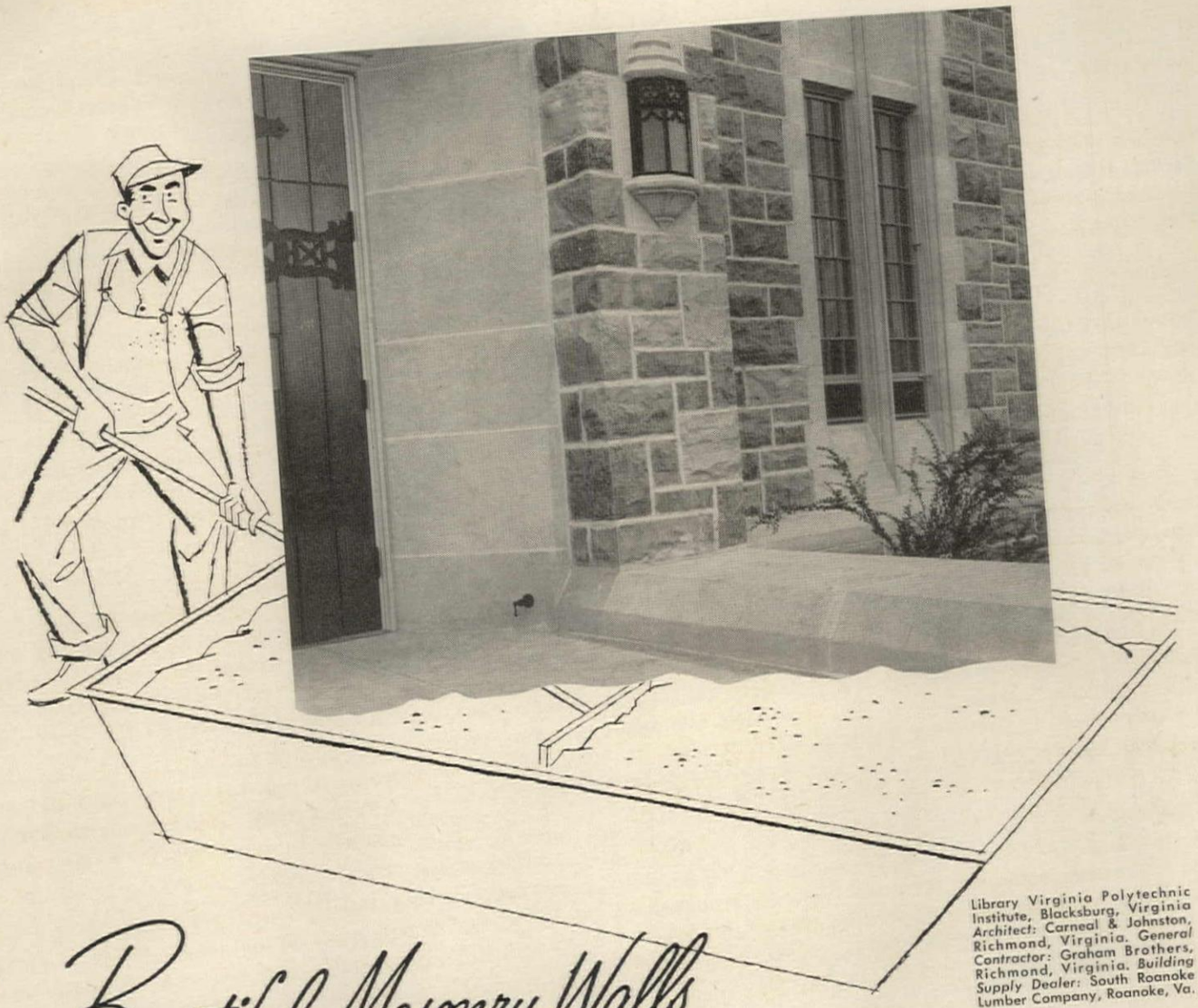
If the slowing up of central-city growth had stopped with people, it would have been one thing. But as the suburbs pulled population from the city, they also pulled retailing and manufacturing. In the years from 1948 through 1954, only seven cities out of 50 on which there are figures had greater gains in retail sales than their suburbs. Washington lost ground to the tune of a 9% gain against 116% outside the city; in Chicago, the rise was 16% within, 57% outside. And while there are no nation-wide statistics to show the shift of manufacturing within metropolitan areas, the figures for New York alone are probably not untypical: in the last six years, manufacturing employment in the city fell from 951,900 to 930,300. In the same period, it rose in Nassau and Suffolk Counties from 46,000 to 96,100, and in Westchester from 42,200 to 47,700.

In the drain of this decentralization, the old city has had hardly a chance to start the process that leads to widespread land boom. The normal sequence is for gross rents to rise rapidly, while operating costs remain fairly constant, thus creating an even greater rise in net rents. This raises the prices of existing buildings which, in turn, makes new construction profitable and eventually leads to a markup in the price of land as demand intensifies. Though gross rent has climbed—the figures of the National Assn. of Building Owners & Managers for all buildings show a rise in rental income, in constant dollars, from $1.46 a sq. ft. in 1941 to $3.22 in 1955—the increase is not nearly so much the result of a climb in the level of rents as it is a reduction in the vacancy rate (for offices, a slide from 17% to 3.1% in 1956). Meanwhile, there has been no stability in operating costs —property taxes are up 60% since 1941 and total operating costs up nearly 100%—with the result that net income today is still under the peaks of the twenties, despite the fact that gross is 42% higher.

Since the price of land is the end product in the building process—i.e., its worth is determined as the result of a capitalization of the returns that could be produced by alternative uses and various combinations of land improvements—these operating realties have served to put a fairly inflexible ceiling on the price of high-grade urban land. Nowhere does this show more clearly than in midtown Manhattan, where despite a strong centralizing countercurrent and a demand for space that is unique in the country, the price of prime sites is still well beneath the levels of the twenties. Rents have not risen rapidly—market resistance has held the bulk of office space to a range of $5 to $6 a sq. ft.—and capitalization rates are unchanged from 30 years ago. The squeeze of rising construction and operating costs has had to come out of something, and that something has been land.

Whether this is a permanent situation remains to be seen. But even before decentralization began taking its toll, there was a sizable body of opinion that held that the real estate cycle might be a phenomenon confined to the young or growing centers, and that in the older entrenched cities rapid rises in price would become more and more of a rarity. More recently, land economists have added new doubts to the traditional premise that real estate prices must increase with those of the rest of the economy and, over the long run, gain inevitably. Leo Grebler, in his study of 581 income-producing properties in New York between 1900 and 1950, found that there had been so severe a decline in the ratio of net to gross income for so long a time that a return to previous levels seemed doubtful. ("It [the record] discloses so sharp a break in the investment experience of two succeeding generations—before and after 1930—that there seems to be more involved than the vicissitudes of cycles.") In a different way, William Zeckendorf of Webb & Knapp has been saying much the same thing—that high-grade land in every city has a price ceiling and that, barring inflation, the values of these prime sites "probably will not rise materially again" (though second-grade sites would continue to show jumps with redevelopment).

Since the greatest rises in land prices normally occur with the first conversion of use, it is entirely possible that, even without the automobile, the old central city was already too mature, too highly developed to respond fully to this latest land boom. With the automobile, it had almost no chance. For the private car has narrowed the city's role as urban catch basin, confining it to more limited, specialized activities that the suburbs cannot perform. And though these activities—communications, culture, finance and management—are of tremendous importance and great growth potential, they are not the stuff that widespread land booms are made of.



Library Virginia Polytechnic Institute, Blacksburg, Virginia *Architect:* Carneal & Johnston, Richmond, Virginia. *General Contractor:* Graham Brothers, Richmond, Virginia. *Building Supply Dealer:* South Roanoke Lumber Company, Roanoke, Va.

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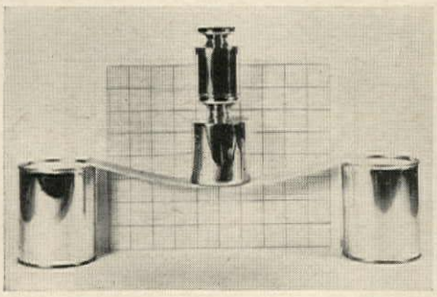
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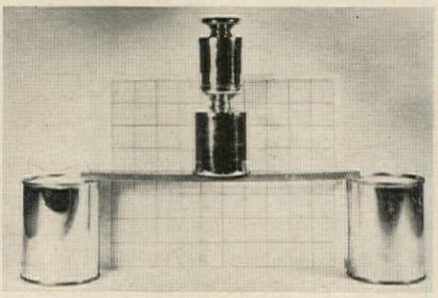
halfway up and the cellular structure is evenly distributed at an average density of 2 lb. per cu. ft. or less, where the best thermal insulating values lie. Careful formulations for specific densities had to be worked out to get the proper speed.

In a test wall, as demonstrated by Bakelite's R. P. Courtney before the National Assn. of Home Builders in Chicago this January, one phenolic formula uniformly filled an 8′ tall cavity (or about 4.3 cu. ft.) in 15 seconds flat. Another, of lighter density, filled an 8½′ tall cavity in 7 seconds, which is almost an explosion. The foam permanently bonds itself to the wall to provide no-sag insulation equal to or surpassing commonly used materials (K value of 0.18 for 2 lb. per cu. ft.). In addition, Bakelite's researchers worked out a technique to fill much larger horizontal wall cavities, as in prefabricated panels, by employing back-pressure on the open side of the wall being foamed to prevent a lumpy surface and uneven distribution. This technique will permit continuous conveyor belt foaming operations for large prefab sections.

Whether foams will move in the direction of prefabrication or foaming-in-place is a moot point. The latter, though presumably the most economical, has the drawback of setting up a chemical operation on the site, which in the case of phenolics means handling acids and noxious fumes under varying outdoor conditions. The more logical route might be prefabrication, in which ventilation and other conditions can be controlled. But problems remain here, such as the continuous mixing of materials that begin to foam within minutes after mixing. And the whole economics of foams remains to be solved. The phenolics, for instance, so far have been tested in only two buildings, a laboratory cold room and a cottage, where their worth has proved out over seven years, but from which few cost data can be extrapolated. Bakelite's next move is to find a fabricator and a builder to make experimental use of these foams in the field.

Meanwhile, foaming methods and mechanisms are developing on all sides in the expanding field of foams for various purposes. United Engineers, Inc., of Boston, for instance, announces a machine for mechanical processing of thermoplastic foams, without the use of chemical agents, for packaging, freezer boxes, boats, subflooring and building insulation. A new company, Dyfoam Corp. of New Castle, Pa., is introducing a Swedish process for the continuous extrusion of expandable polystyrene (granule form developed by Koppers Co.) in almost any length desired for trucks, railroad cars, warehouses, general building insulation. The Dayton Rubber Co., which has a broad program of research, formulation and production on urethane foams, flexible to rigid, has a block-long, electronically controlled machine, the largest of its kind in the US, for the continuous forming of huge foamed sheets. The semirigid to rigid urethanes, because of their easy handling and adhesive qualities, also are particularly adaptable to spray-on and foaming-in-place techniques, so that the development is likely to move in both directions.





**Rigid foam:** The test setup above shows the great rigidity, without loss of strength, imparted to a sandwich panel by a low-density core of new syntactic foam plastic. Left: a strip of conventional glass-fiber reinforced plastic bends readily under a 6½ lb. load. Right: a syntactic foam sandwich of equal weight, glass-fiber reinforced, shows little deflection.

### Future of foam

Ultimately, a third and exciting new foam technique may come to the fore, known as syntactic foams, jointly developed in a fantastic roundabout way by Standard Oil (Ohio) and Bakelite. The unique element in these foams is a tiny (0.0013″ diameter), hollow, nitrogen-filled phenolic sphere, developed to reduce evaporation losses in oil storage tanks. Floated on the oil by the millions, these spheres, called Microballons, cut losses as much as 50%. Then Bakelite discovered that the spheres, when mixed and heat cured with phenolic, epoxy, polyester or other plastic bonding resins in proportions up to 40% by weight, produced an unusual, lightweight, extremely uniform, spherical-cavity unicellular foam of great strength. Tensile strengths up to 700 psi and compressive strengths to 2,000 psi have been achieved. As cores in glass-fiber sandwich panels, syntactic foams have reached flexural strengths of 4,500 psi, tensile strengths of 2,900 psi and compressive strengths up to 12,000 psi.

Too new and expensive as yet for general building applications, the syntactics are going into aircraft and other special uses. But the syntactics have the advantage of reducing by as much as 50% the costs of such plastics as reinforced polyesters because of their low density, with no loss of strength and great improvement in rigidity. As the cost of these higher priced bonding plastics come down, the syntactics, themselves in development, can move in to push costs lower. Beyond this, the syntactics bring to plastics the first mix comparable to cement and gravel in forming concrete. Unlike other foams, the syntactics form a controllable putty-like mass that can be molded to shape, troweled or sprayed on, forced into cavities or pressed into sandwiches, and cured at air temperatures. But whereas reinforced concrete runs 100 to 150 lb. per cu. ft., syntactics range from 20 to 30 lb., which opens the way to dramatic weight reductions in shell and other prestressed structures.

The big lag in developing the great potentials of foams in construction lies in the fact that architects, builders and contractors have few facilities or impulses for research on such new materials. Basic producers may have to underwrite a development program. But sooner or later, foam structures will make their way as in nature.

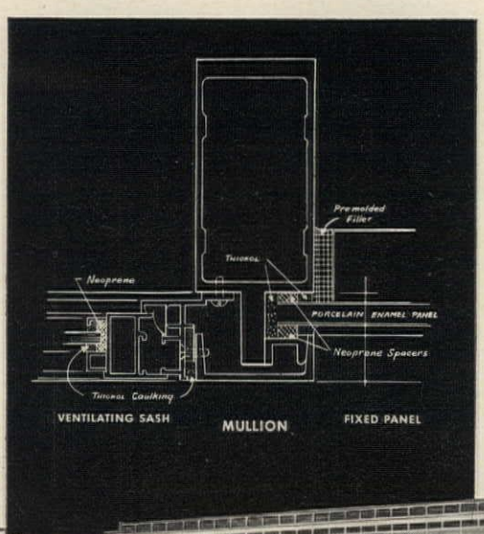
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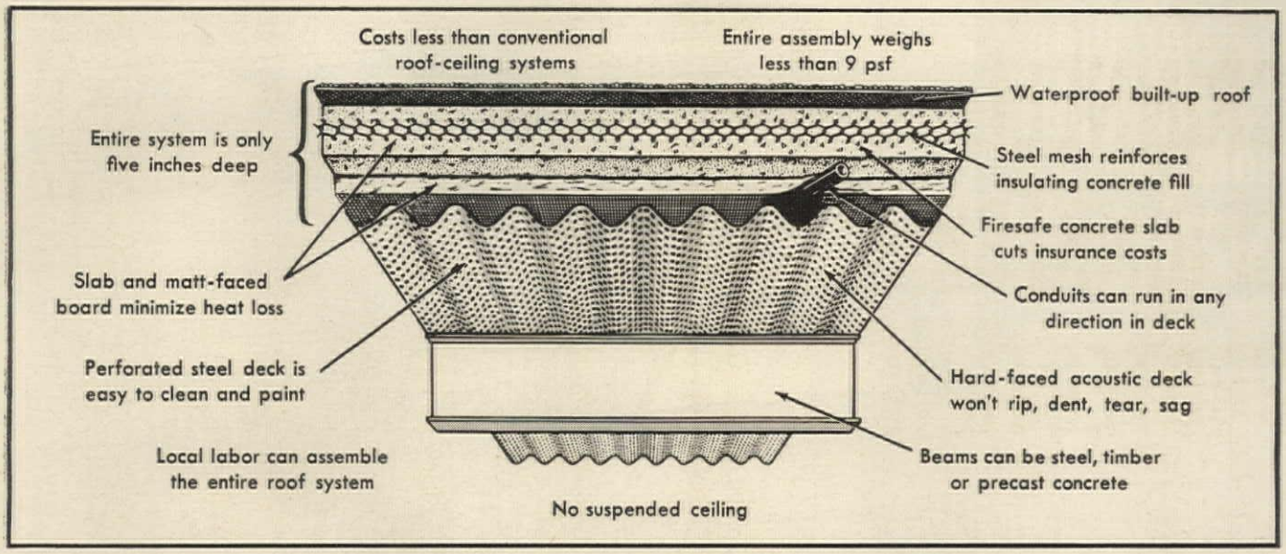
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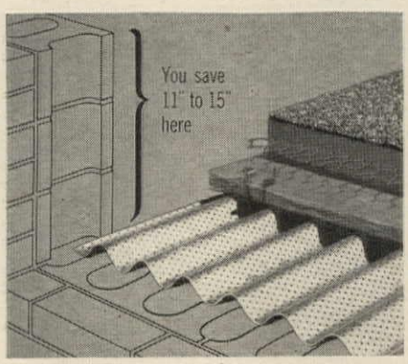
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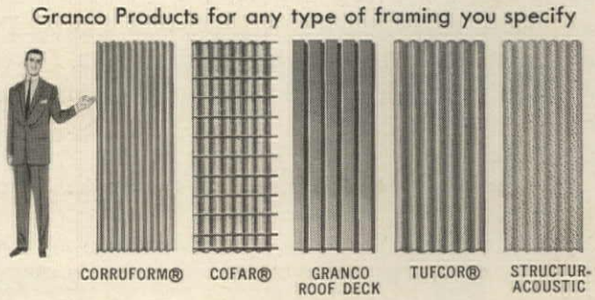
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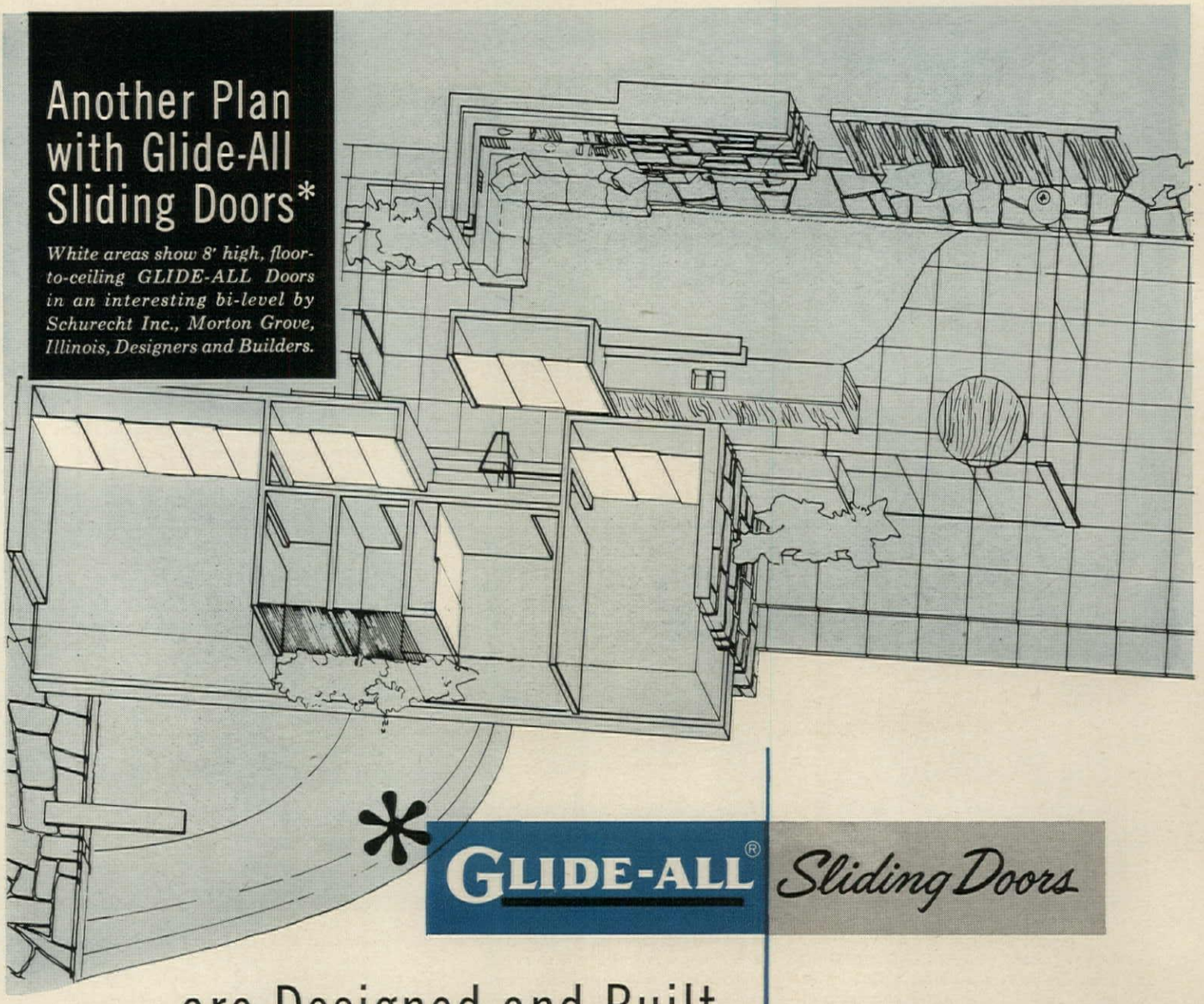
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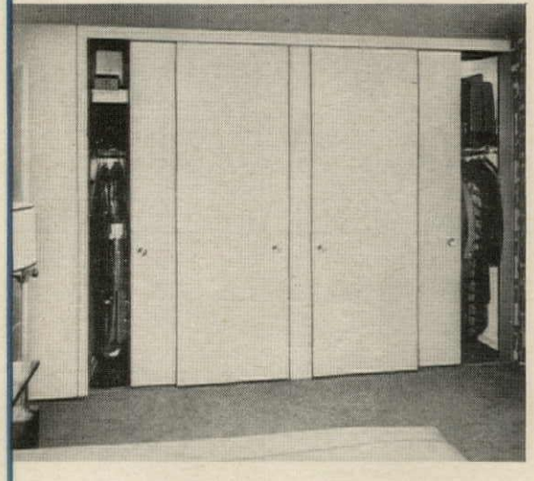
# Another Plan with Glide-All Sliding Doors*

*White areas show 8' high, floor-to-ceiling GLIDE-ALL Doors in an interesting bi-level by Schurecht Inc., Morton Grove, Illinois, Designers and Builders.*



* GLIDE-ALL® Sliding Doors

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Plan your storage space with GLIDE-ALL Sliding Doors for "better living" for home-buyers, and profit for you. For complete details, "specs" and prices write the Woodall Plant nearest you . . . see Sweets Catalogs, too.

*GLIDE-ALL Doors are available in principal cities throughout the United States and Canada. For information write Plant nearest you.*

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Wall covering is one of many new products made of Geon that are now available for modern building and home construction. "Geon" is your assurance of quality in wall covering...cushioning ...vinyl floor tile...coated metal panels ... electrical insulation ... and even newer ideas you'll be using tomorrow.

**Brick or Stone?** *Neither, except in appearance. It's embossed vinyl sheeting made of Geon resins, that simulate the rich look and true colors (and much of the durability) of brick or stone. Called "Decro-Wall", this wall material is made by The Decro-Wall Corporation, Yonkers, New York.*

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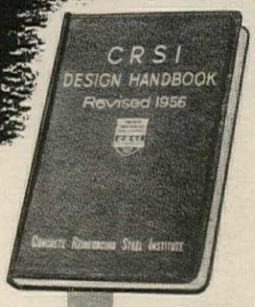



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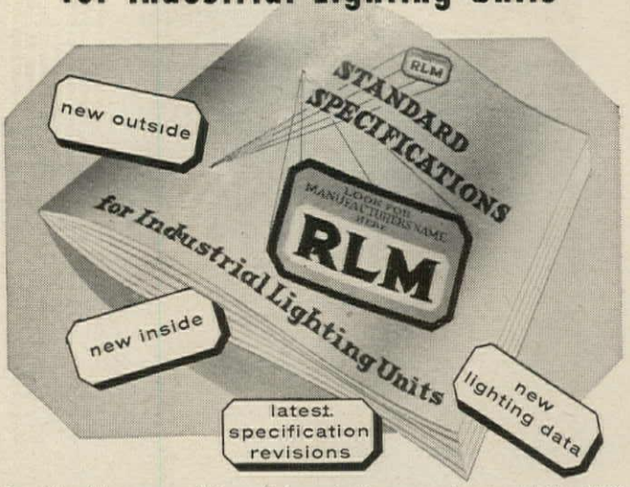
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*O. L. Plucker reports on OTT ELEMENTARY SCHOOL, INDEPENDENCE, MO. Architect: E. M. Fuller, Kansas City. Consulting Engineers: Howarth, Scott & Kinney, Kansas City.*

# "Westinghouse Air Blenders Very Satisfactory" Says O. L. Plucker,

## Superintendent of Schools, Independence, Mo., about new Ott Elementary School Installation

At Ott Elementary School, 62 Air Blenders, plus 2 Westinghouse Air Handling Combination heating and ventilating units serve 20 classrooms and a gymnasium all-purpose room. Installation is now in its second heating season.

You, too, can enjoy these outstanding advantages by installing Westinghouse Air Blenders in your school:

- No fans, motors, or electric wiring in classroom
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For further details about Westinghouse Air Blenders for your school buildings, call your nearest Sturtevant Division Sales Engineer today, or write Westinghouse Electric Corp., Sturtevant Division, Hyde Park, Boston 36, Massachusetts.

## WESTINGHOUSE AIR HANDLING

YOU CAN BE SURE...IF IT'S Westinghouse

J-80616

# Here's what makes Bronze Valves






**TYPICAL OF WALWORTH QUALITY** is the union body-to-bonnet connection which stiffens the body against internal pressure; makes taking the valve apart a simple operation and reduces the chances of distortion or leakage even though the valve is repeatedly taken apart and reassembled. With this type of construction there is no possibility of the bonnet coming off the valve while the handwheel is being turned.

**HEAVY BODY CONSTRUCTION** is typical of *all* Walworth Bronze Valves. Extra-thick walls and rugged wrench hexes constitute a high safety factor and prevent distortion while the valve is being installed in the pipeline. Extra-deep pipe threads are accurately machined to eliminate leakage. Walworth Bronze Valves are also available with flanged, silver-brazed or soldered ends in certain sizes and types.



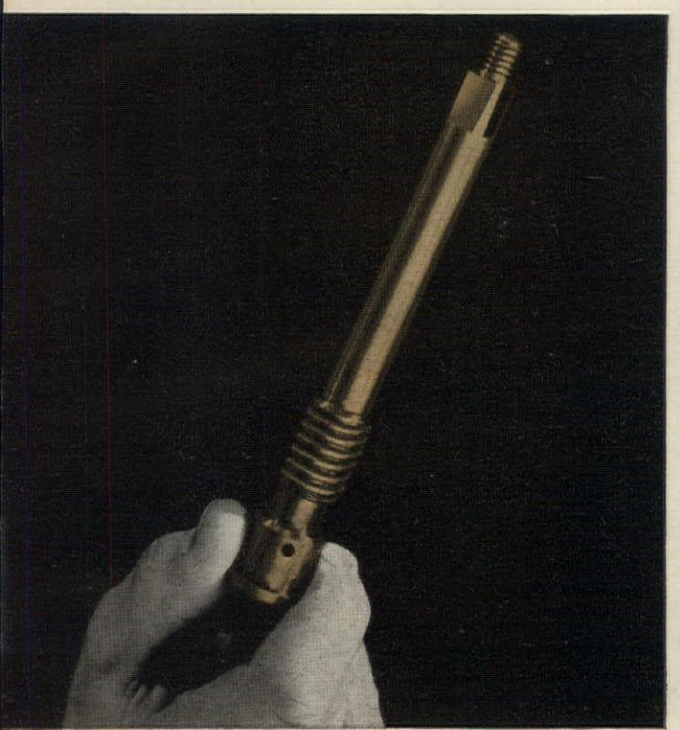
**MEET THE CHAMP!** The chief engineer of a midwestern plant had used a parade of valves in severe boiler blowdown service. Most didn't last longer than 60 days. None survived 90 days.

On the recommendation of a Walworth Representative the engineer installed the Walworth No. 225P Bronze Globe Valve shown here, stating that he would be entirely satisfied if it lasted a bare three months. Exactly 4 years and 362 days later the valve was taken out of service—not due to the wire drawing, steam cutting and galling which made the other valves short-lived—but because the highly turbulent steam finally wore a small hole in the body.

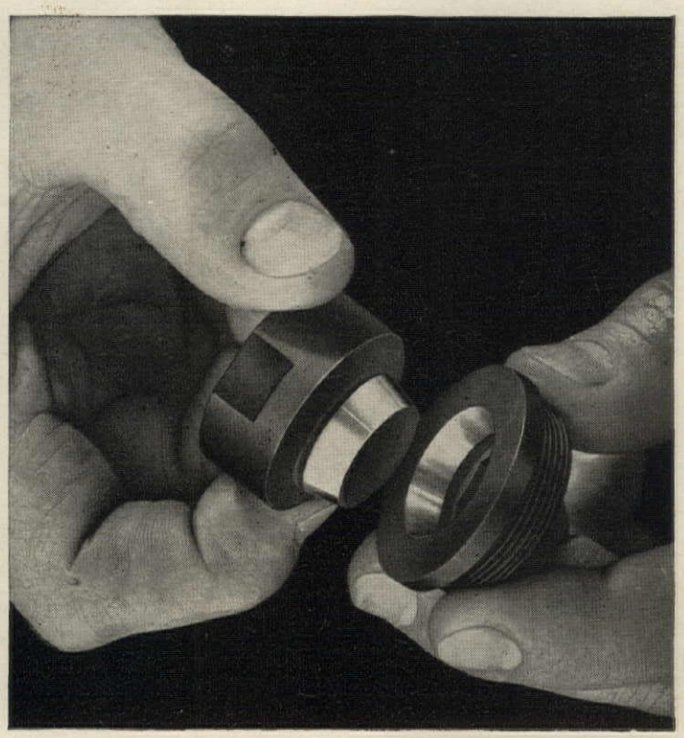
This is the kind of valve satisfaction you get—when you specify and use Walworth Bronze Valves. They are the longest wearing, toughest bronze valves on the market.

**Walworth Subsidiaries:** ALLOY STEEL PRODUCTS CO. • CONOFLOW CORPORATION • GROVE VALVE AND REGULATOR CO.

# Walworth *the* real bargain!



**EXTRA-LARGE STEMS** with extra-long, extra-deep threads prolong valve life, protect against wear and distortion and provide tight positive shutoff. The surface of the stem is machined to a glass-like finish for minimum handwheel effort and to preserve the packing which results in fewer inspections and less maintenance. The top of the stem is tapered and squared to hold the handwheel securely.



**TO REDUCE WIRE DRAWING** to a minimum, certain types of bronze globe valves have stainless-steel plug-type seats and discs heat-treated to a nominal hardness of 500 Brinell, adding years to valve life even in severe services. These valves can be tightly closed on sand, grit or pipe scale without damage. Seats and discs are machined simultaneously, assuring perfect mating.



There is a Walworth Bronze Gate, Globe, Angle or Check Valve for every service. Walworth is continually developing new valve types and materials, including plastics, to keep pace with the growing variety and severity of services in modern industry. For full information, see your Walworth Distributor or write: *Walworth, 60 East 42nd Street, New York 17, N. Y.*

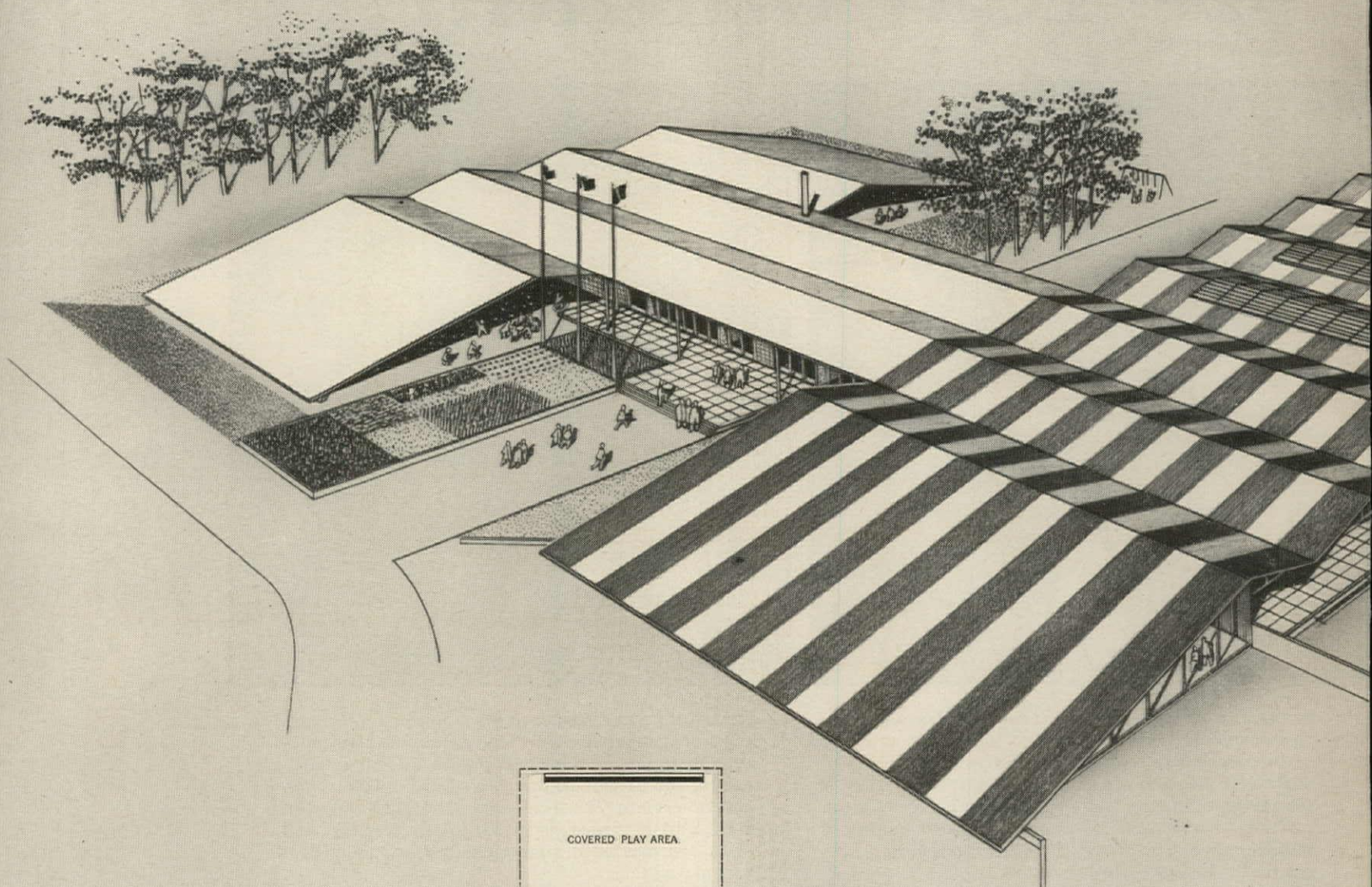
**WALWORTH**

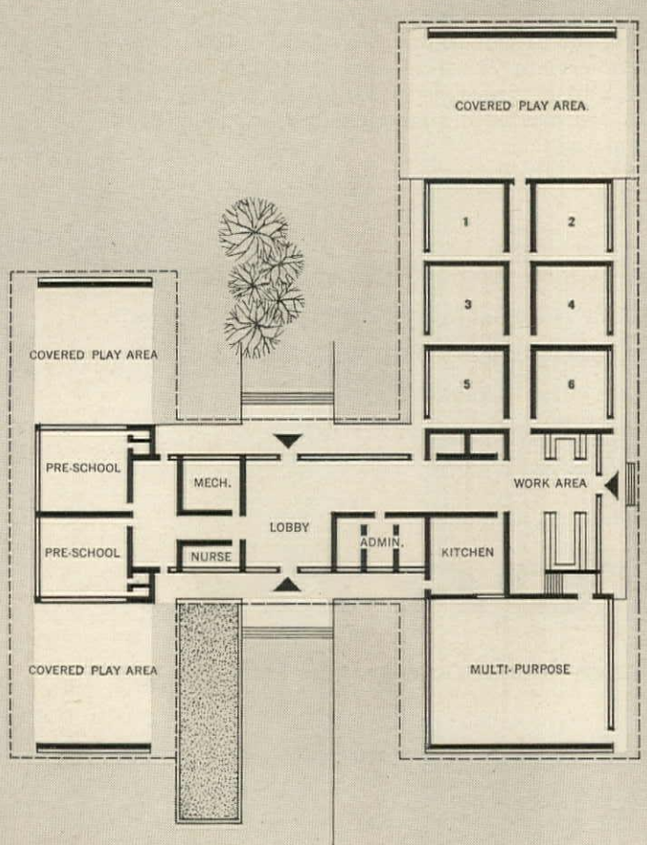
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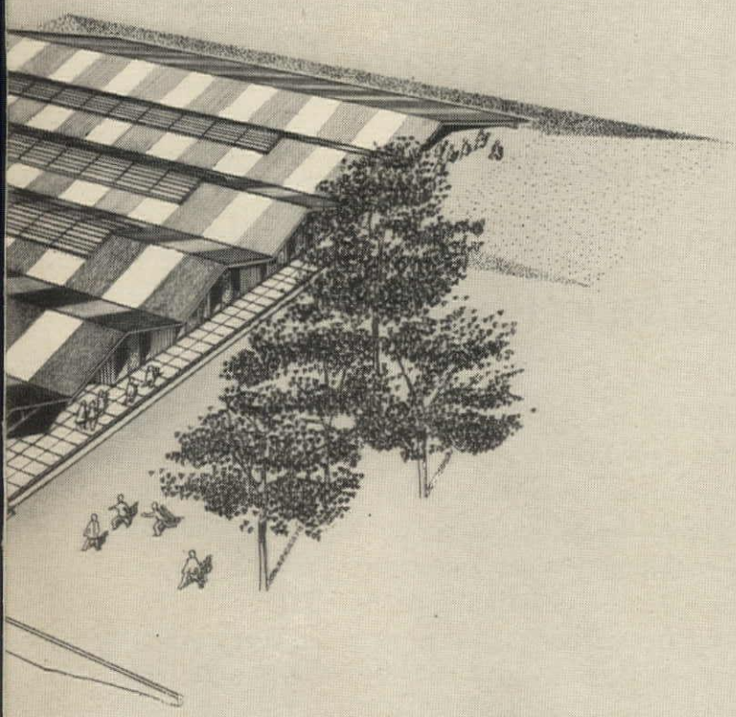


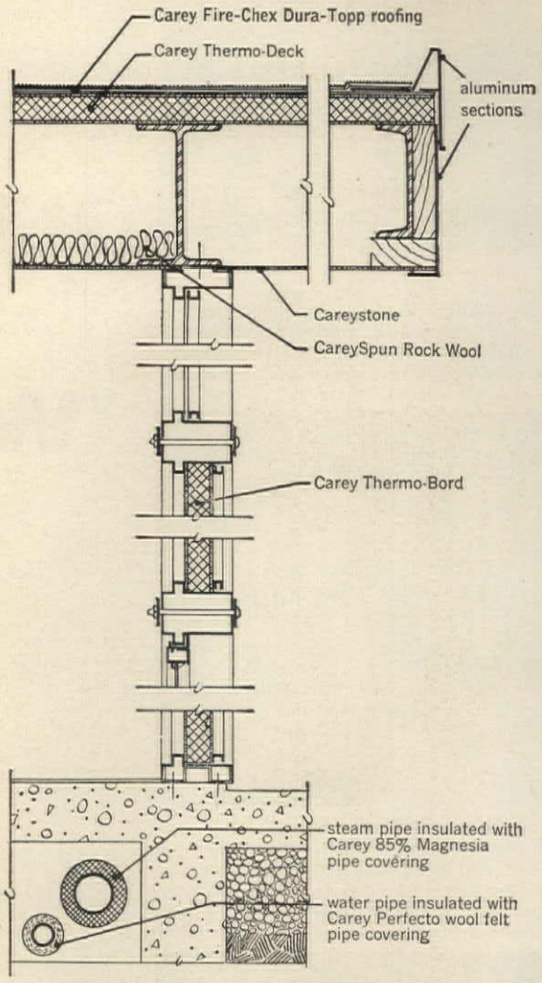



This design study presents what we believe to be an interesting solution of one of America's most important building problems. It is the work of a team of young architects who are gaining recognition for imaginative and workable thinking.

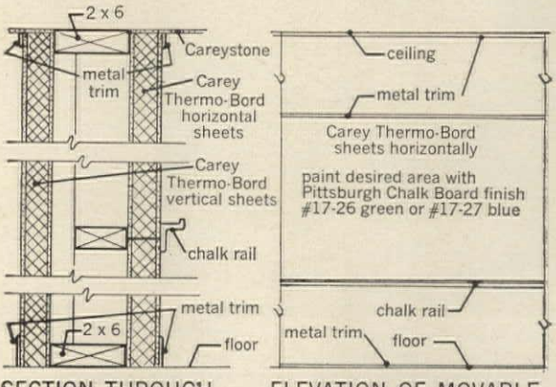
Many widely-known Carey building products are employed in this design study.

# school



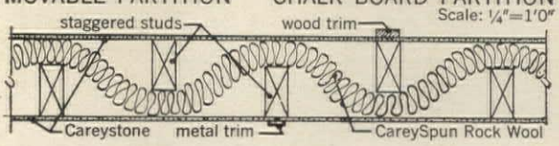



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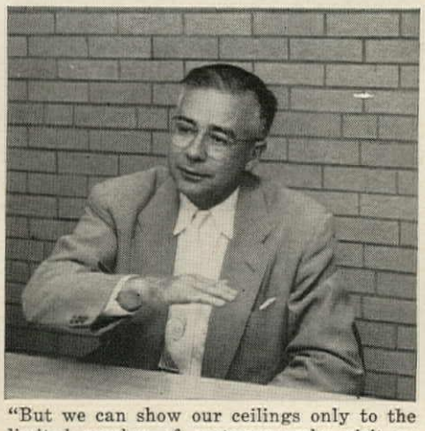
"We have always made it our business to cover and influence every element in the chain of sale — distributors, subcontractors, general contractors, engineers, architects, owners and tenants. No matter the job, every building team member has an influence on the decisions of others."



"Take our new office building. No one man can claim the full credit for this building — the building team built it. On every decision we were aware of subtle influences from all sides. The team functioned all the time — sometimes formally, sometimes informally."



"And that's one of the reasons we built this new building here in Vermilion, Ohio. We wanted a local showcase for our product. We wanted to show and influence our visitors — who are, more often than not, building team members — how well our product looks in actual use."



"But we can show our ceilings only to the limited number of customers who visit us here. So we use FORUM as the national showcase for our product. By advertising extensively in FORUM, we know we are reaching the same kind of people we like to have visit us in Vermilion."

# "We cover every element in the chain of sale"

## says **T. D. Wakefield**
## Executive Vice President
## THE WAKEFIELD COMPANY

Ted Wakefield of The Wakefield Company has two reasons for knowing the effectiveness of building team selling. As an active client-member of his company's building team, he has been at the receiving end of many a building product salesman's call. And, like every other successful building product salesman,* he knows from experience that he must reach every influential and decision-making member of the building team before a sale can be wrapped up. That is why Wakefield sales require the constant support of a major advertising campaign in Architectural FORUM. More than any other magazine FORUM delivers the highest concentration of building team members. In addition, of course, to the country's most important and busiest architects, engineers and contractors FORUM is read by the decision-making clients who are *actively* building new buildings, modernizing old buildings.

# FORUM

Architectural Forum/the magazine of building/published by TIME INC.

*HOW BUILDING PRODUCTS ARE SOLD. Dun and Bradstreet's report on a personal interview study made among leading building product sales directors and distributors. Write for your copy: Market Research Manager, Architectural FORUM, 9 Rockefeller Plaza, New York 20, New York.





*Untted Services Automobile Association office building, San Antonio, Texas. Architects: Phelps & Dewees & Simmons, San Antonio; Atlee B. & Robert M. Ayres, San Antonio; Mechanical engineer: Gerard M. Baker, San Antonio; Electrical engineer: Beretta, Greenslade, Clark & Collins, San Antonio; Prime contractor: Henry C. Beck Construction Co., Dallas; Mechanical contractor: A. J. Monier Company, San Antonio.*

# The right atmosphere calls for quality air conditioning "custom" controlled

WHEN YOUR clients plan to build—or modernize—they're sure to want year-round air conditioning—and complete, coordinated *control.*

For the right atmosphere can help assure improved working efficiency and health of their employees, and customer good will.

The right atmosphere calls for quality heating, ventilating and cooling, planned for the specific needs of their business and individual spaces of the building.

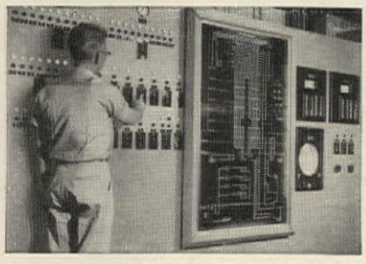
And it calls for a carefully-planned Honeywell control system, *customized* to the building. A good example on both counts is the new home office of the United Services Automobile Association in San Antonio.

Here the Honeywell installation provides individual office temperature control with a thermostat in each office to meet individual preferences. And in each of the building's working spaces strategically-placed thermostats assure comfort no matter what the activity.

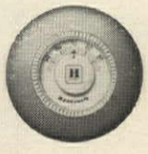
Your clients need Honeywell *custom* control to protect their investment in air conditioning equipment, for without quality control, no system will operate as it should—effectively, economically.

To learn how Honeywell custom control can help bring the right atmosphere to any building, new or existing, call your local Honeywell office. Or write Honeywell Dept. MB-3-104, Minneapolis 8, Minnesota.

## Master Control Panel Drastically Cuts Operating Costs



***Central supervision*** of year-round indoor environment in the United Services Automobile Association building is provided by this Supervisory DataCenter control panel. By coordinating and centralizing all controls, it allows one man at one location to supervise comfort throughout the building, and to monitor and control operating equipment in the air conditioning system. It adds efficiency, prevents expensive equipment breakdowns and reduces demands on maintenance personnel's time. In this manner the Supervisory DataCenter does much to cut the cost of air conditioning, and at the same time to make it more effective. Only Honeywell has the experience and the complete control line to provide an installation that so effectively ties in all types of control, so well adapts to any building.



*The Honeywell Round . . .*
*World's Most Popular Thermostat*

MINNEAPOLIS
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Air Conditioning Controls

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HONEYWELL

*Individual thermostats in large rooms, like the executive suite reception area shown at left, maintain comfortable temperatures at all times, provide the right atmosphere for cordial customer relations. And in the private offices adjoining the reception area, individual office thermostats give occupants finger-tip control of the comfort level they prefer.*

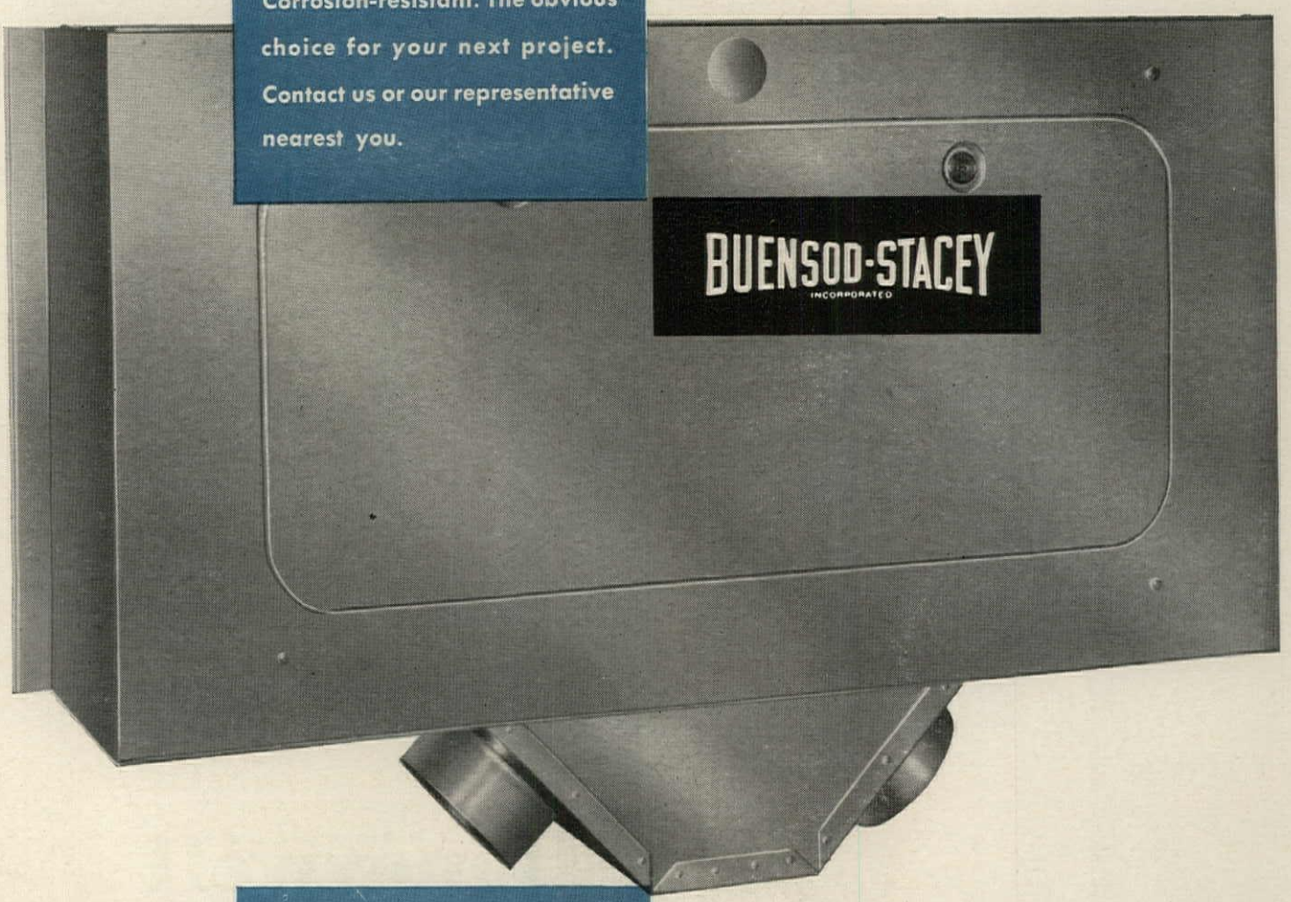
This is a Buensod Dual-Duct air mixing unit. More than two-thousand like it have been installed to provide *ultra-flexible* air conditioning in New York's Rockefeller Center. Many thousands have been installed elsewhere. *But the important news is this: now*

# DUAL-DUCT

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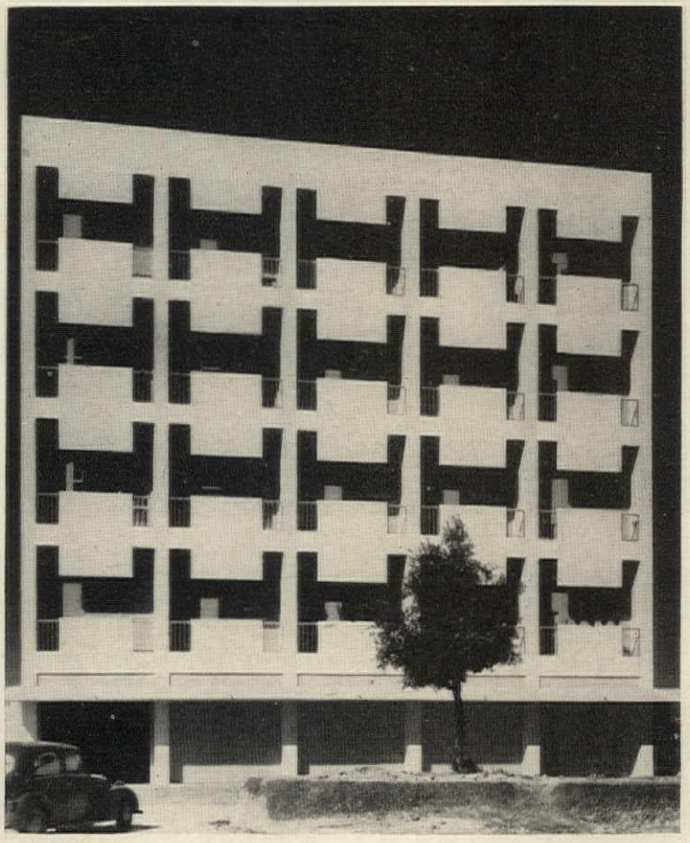



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# A continuing review of international building



MARC LACROIX

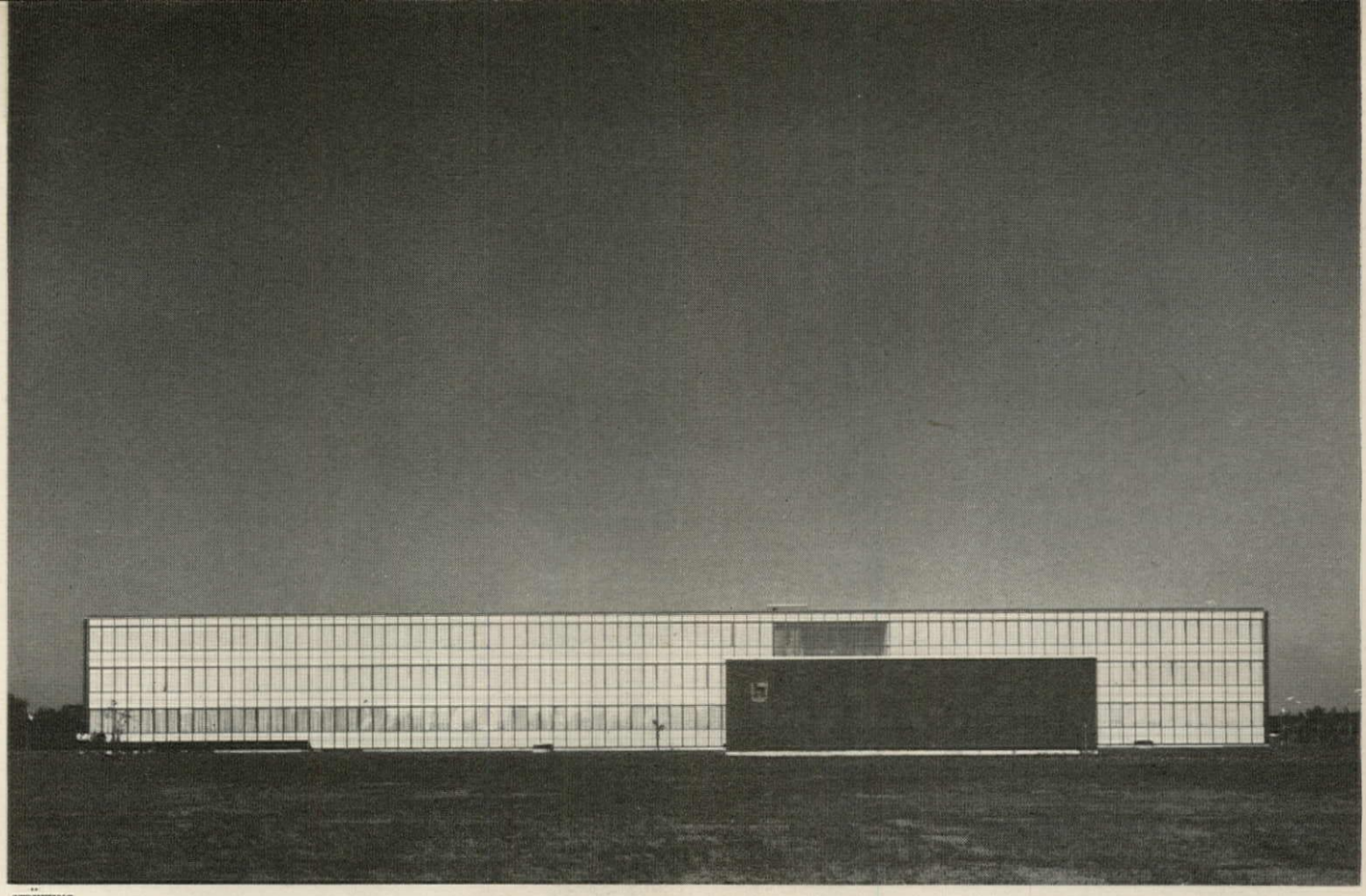
**NEW VEIL FOR NORTH AFRICA**

For year-round control of the Moroccan sun, Architects Gaston Goupil and Edouard Delaporte fitted out the southeast façade of their apartment building at Meknes with permanent, reinforced concrete veils. The purpose of the blinds is to exclude summer's excessive sunlight without losing benefit of winter's lower rays. The effect is clean, precisioned, yet appropriately mysterious.

**NEW VISTA FOR VENEZUELA**

Perched precariously and expensively ($40 million) atop Venezuela's Mt. Avila is a new luxury hotel designed by Harvard-trained Tomas J. Sanabria. The 19-story hotel is placed at the 7,000'-high point of the chilling but scenically worth-while Caribbean-to-Caracas cablecar system. Clearly any architectural structure would be hard pressed to rival the technical achievement of the 7-mi. long "teleferico"—but the hotel strives to match it with a collection of architectural clichés, encompassing an ice-skating rink, two restaurants, a dance hall and the promise of a riding stable beneath its confusion of roofs.



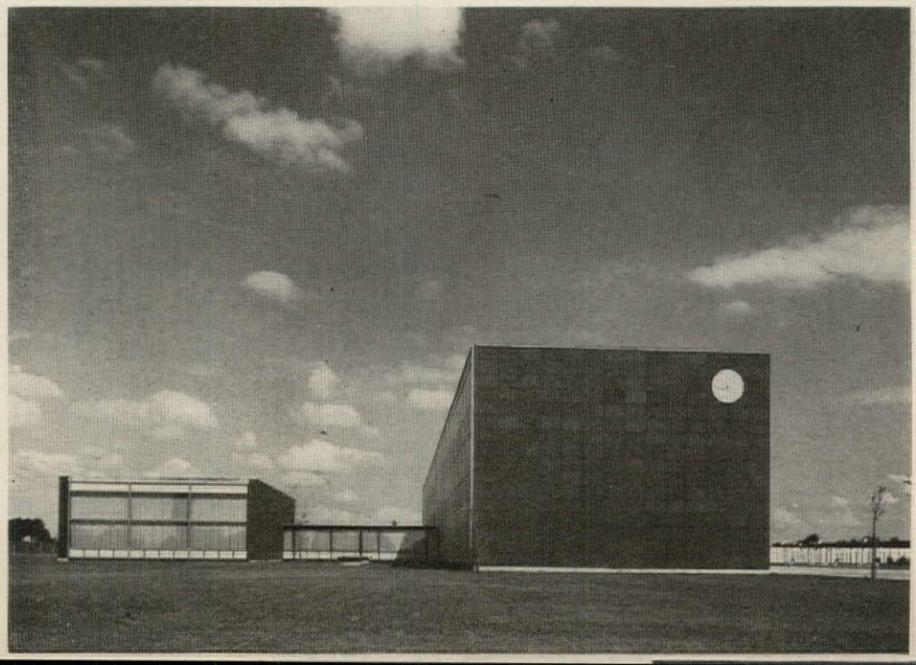


STRUWING

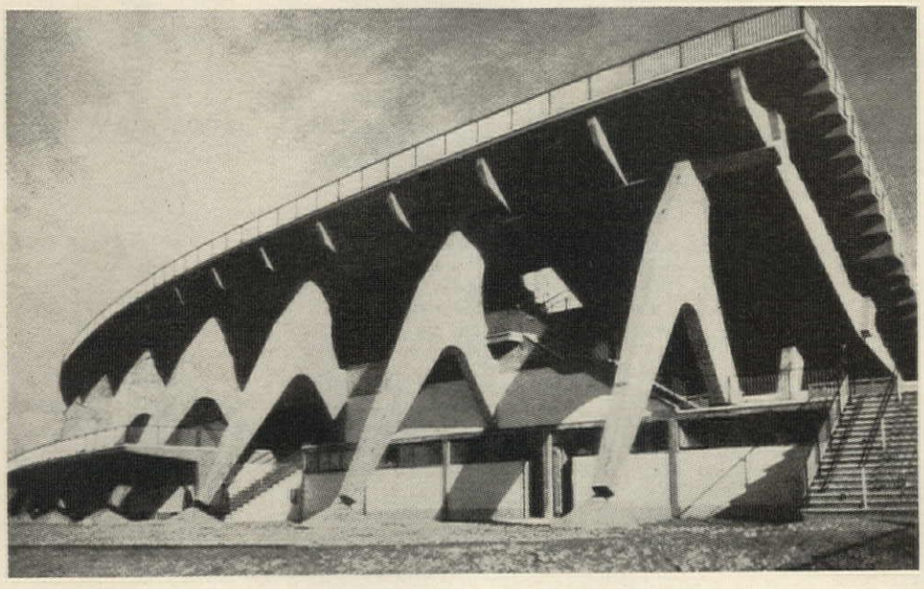


**DANISH DETROIT**

To touring Americans, the new Town Hall at Rödovre may appear uncomfortably familiar, bringing to mind GM's Technical Center (AF, May '56) more readily than Andersen's gabled villages. But, as an experiment in international building, it is by no means unsuccessful. One of few European buildings to take full advantage of modern prefabrication techniques, the hall has a flexibility (movable partitions) and a practicality (multi-purpose offices) that are admirable anywhere. Architect Arne Jacobsen's plan is simple: a three-story office block with a central corridor connected to a smaller, one-story pavilion. But, as with all civic halls, the number of functions to be served is complex indeed, and the plan must be adaptable to all of them. Unlike its big brother in Detroit, the Danish building has operable windows (every other one opens), and its base is regularly "planted-out" by parked bikes and motor scooters. The longitudinal walls are of gray glass; the end walls, of black granite.

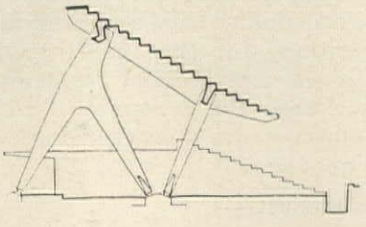






**ITALIAN STADIUM**

Strong and high-stepping, 12 pairs of legs supported the stands of Luigi Piccinato's new track stadium at Pescara. Each exterior foot is gracefully poised on the point of a pyramidal step. The stadium seats 25,000 spectators, routes them efficiently up and down 18 separate stairways. Besides giving Piccinato's architectural reputation a boost, the design also highlights his fame as a leading town planner.



**SWISS ELASTIC PLANT**

An elasticized fabric manufacturer in Gossau, Switzerland, wanted a factory that would be free of all interior supports, evenly lighted and inexpensive to build. To meet these three major requirements, Architects Danzeisen and Voser constructed a shed of seven pickaback cylinders. The cylinder construction admits a steady north light, is self-supporting and is reputed to have saved 12% of conventional costs. A not unexpected plus: a handsomely different factory.

JACOB SCHILDKNECHT



BENY KOTZ



# TOILET COMPARTMENT CONSTRUCTION THAT *Saves money for building owners*

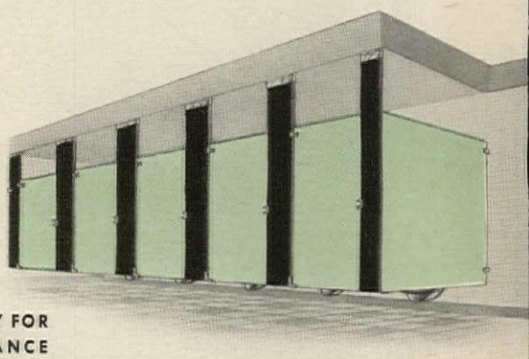


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### TO EVALUATE

## Sanymetal PORCENA*

(*Porcelain on Steel)



**LABEL OF QUALITY FOR LOWEST MAINTENANCE**

Porcena meets Porcelain Enamel Institute standards for acid-resisting porcelain enamel — recognized label of quality. Quality enamel for toilet compartments, pioneered by Sanymetal, costs less to maintain. It withstands scratches, shocks, is easily cleansed of pencil and lipstick marks, *never requires refinishing.*

YOUR REASON for selecting Sanymetal *PORCENA* (Vitreous Porcelain on Steel) as the material for toilet compartments is to save money for the building owner. *PORCENA* saves because it is durable, so easily cleaned. But to compare *PORCENA* with others products, get candid answers to these questions:

Is the product —

... proved by many thousands of successful installations, not by a few, to be beyond an "experimental" stage? *Sanymetal Porcena is!*

... guaranteed for quality attested by the Porcelain Enamel Institute label? *Sanymetal Porcena is!*

... available in 22 lustrous, lasting, uniform colors? *Sanymetal Porcena is!*

... fully engineered so there is no need to drill, cut, or shape the porcelain surface, exposing bare metal? *Sanymetal Porcena is!*

... fitted with hardware designed to match the extra durability and weight of porcelain enamel construction? Hardware for *Sanymetal Porcena is!*

... backed by 20 years of experience in which *not one* installation has failed, faded, required repair or replacement in normal use? This is true of *Sanymetal Porcena!*

Ask these revealing questions, and let the answers be your guide.

*See Sweet's, or send for Catalog 93 describing all Sanymetal Compartments. If you wish we will mail you all advertisements in this series explaining construction details that mean quality.*




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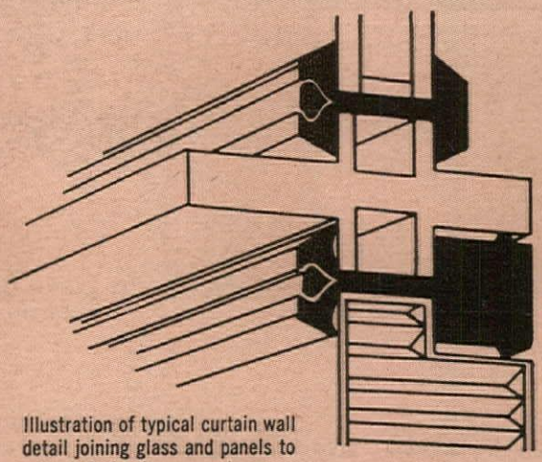
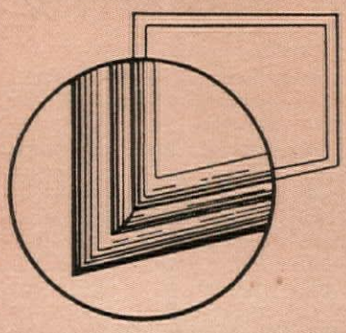
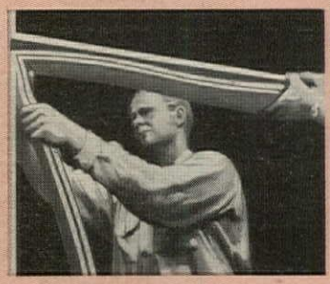


Illustration of typical curtain wall detail joining glass and panels to extruded aluminum members.



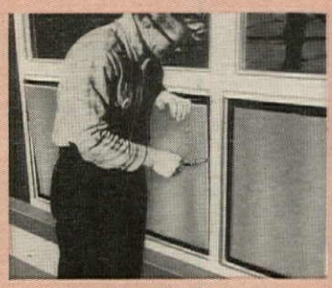
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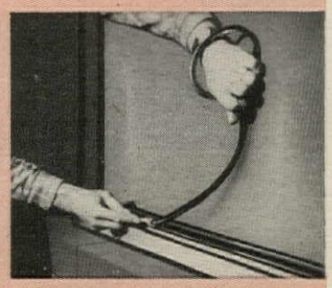
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Inside installation saves time, labor costs and scaffolding; aids removal and replacement of glass or panels.



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Filler strip "zips" into locking channel for a tight, leakproof, lasting seal. But replacement is as easy as original installation, and gaskets are reusable, thereby eliminating material costs.

Specify . . .

# INLOCK

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General Motors Corporation, Dayton, Ohio

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